

Inside Dope

By GEORGE
F. TAUBENECK



Learn to live and laugh —
thus delay your epitaph

Stories of the Week
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—A Brilliant Letter

Stories of the Week

People often wonder how "jokes" originate. Fact is, many of them result from accidental, but true, experiences.

In one such Mrs. Gene Tamm of Detroit, a volunteer Red Cross worker, was in church. Man alongside apparently suffered a heart attack. His head dipped slowly downward at an unprayerful moment.

Following up her First Aid training, she pressed his head quickly onto his knees, to restore blood circulation.

"Lady," he croaked, "let me up, please. I just dropped a dime."

Announced a little girl: "You have to get a man to have a baby."

"Why?" queried her grade-school friend.

"Well, somebody has to pay for everything."

"Al," chided the comptroller, "I see you put down \$18 for food on your expense account. Tell me how you could get away with that in one day."

"It wasn't easy," replied the salesman. "I had to miss lunch."

Preacher on Business Practices

Reports of business troubles moved Rev. Harvey C. Hahn of Dayton's Otterbein Evangelical United Brethren Church to make some pungent comments on business in a recent sermon.

Mr. Hahn took issue with modern selling practices as well as some customer buying habits, and insisted that perhaps refrigerators and air conditioners were not moving because "God's day has been desecrated by selling them on the Sabbath."

There must be something wrong with merchandising, he said, when a \$139 dryer can be thrown in free on the purchase of a \$350 refrigerator. He asked, "Are they worth what you said they were worth in the first place?"

"Had the retailer and manufacturer been consistent in their habits and their actions, perhaps we would not be facing this unemployment situation. They may have low-priced themselves out of the market," he concluded.

(Continued on Page 8, Col. 1)

Reorders Rise as Heat Breaks Air Conditioner Sales Barrier

DETROIT — Further reports on the results of the mid-June heat wave through the midwest and east indicate that the hot weather broke the dam on air conditioner sales.

Many dealers were reported to have cleared their inventories and to be reordering in anticipation of further consumer buying.

Cooler weather brought more comfortable temperatures to the midwest last week, though the east coast had warm, humid weather to mid-week.

Post-heat wave sales in the east were described as normal for this time of year. The estimated 2 million unit sales for the year seemed again possible.

"Sales during the heat wave completely offset the poor showing in the northeast in recent weeks," declared C. W. Paulson, manager of the room air conditioner division for Westinghouse Electric Corp.

"Dealers who were overstocked and worried sold out and reordered from distributors."

Davega Stores, New York

Dallas Effects Cooling Code

DALLAS — A new air conditioning and ventilating code for the city of Dallas is scheduled to go into effect on July 10. It was adopted by the city council on June 10.

The code is designed to provide minimum standards, provisions, and requirements for safe and suitable design, materials, and methods of installation for heating, air conditioning, refrigeration, ventilating, and evaporative cooling.

The Air Conditioning & Refrigeration Contractors Association of Dallas worked closely with City Building Inspector Cecil Farrel in formulating the code, Col. John A. Smith, Jr., (Concluded on Page 6, Col. 1)

Plans Supermarket Development Into Small Department Store

CRANFORD, N. J. — Within the next five years, the supermarket will develop into a small department store, carrying a complete food line but giving equal emphasis to other general merchandise.

That's what a long-range planning committee for the Wakefern Food Corp., parent of the Shop-Rite food cooperative, foresees and is planning for, according to the committee's report.

Goal of the committee was described as "developing as many of our stores as possible into larger super merchandising centers handling a wide variety of general merchandise in addition to a complete food line." (Concluded on Back Page, Col. 1)

City appliance chain, found air conditioner sales continuing strong even after the heat eased up a bit.

Joseph W. Thunell, room air conditioner manager for Carleton-Stuart, Inc., Carrier distributor on Manhattan, found about 50 dealer trucks lined up outside his warehouse constantly.

"With four loading platforms at work and an average loading time of 12 minutes a truck, it is estimated that almost 1,000 (Concluded on Back Page, Col. 1)

Freezers Get Knoxville Area Dollar Volume In May Sales

KNOXVILLE, Tenn. — Home freezers in May chalked up the highest dollar volume of any major appliance for Knoxville area dealers, the Knoxville City.

Utilities Board reported recent. In unit volume, they outsold refrigerators and electric ranges. Room coolers surpassed all other major appliances in unit volume.

During May, the 40 reporting dealers sold 581 room air conditioners valued at \$121,524 and 412 home freezers valued at \$122,167. They also sold 353 refrigerators at \$103,811, 361 electric ranges at \$79,990, and 467 automatic washers at \$108,343.

Double Car Compressor Shipments

ARI Reports 159,732 Units Moved In 3 Mos.

WASHINGTON, D. C. — Manufacturers' shipments of compressor bodies designed for use in automotive air conditioning during the first quarter of 1957 almost doubled the figure for the same period of 1956, it is reported by George S. Jones, Jr., managing director of the Air-Conditioning & Refrigeration Institute.

In the first three months of this year, total shipments of automotive compressor bodies amounted to 159,732 units, compared with 86,865 units in the first quarter of 1956 and 284,022 for the entire year 1956, the ARI official said. The gain in shipments of automotive compressor bodies was the largest shown in ARI's statistical release on manufacturers' shipments.

Shipments of all types of compressor bodies used in air conditioning and refrigeration units (except household refrigerators (Concluded on Page 6, Col. 5)

AGA To Fan Gas Cooling Flame

NEW YORK CITY — Formation of a 12-man Air Conditioning Promotion Committee to stimulate the promotion and sale of residential, commercial, and industrial gas air conditioning equipment has been announced by the American Gas Association "as the industry's latest major step to accelerate its development and marketing program in this fast-growing field."

The AGA, which recently doubled its appropriation for gas air conditioning research during the current year, announced that W. W. Selzer, director of business promotion for the Columbia Gas System Service Corp., will serve as chairman of (Concluded on Page 25, Col. 1)

See Anti-Bid Shopping Bill Likely To Pass

WASHINGTON, D. C. — Although it is opposed by the Administration, a bill which would curb "bid shopping" on Government contracts is expected to pass the House soon and it is reported the Senate probably will follow suit.

Approved by the House Judiciary Committee, the bill specifies that the general contractor on a Federal contract must name subcontractors and their terms and that if he switches, any savings go to the Government.

At present, a general contractor (Concluded on Back Page, Col. 5)

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12 Detroit Heating Contractors Take Restricted Refrigeration License

By George M. Hanning

DETROIT — Fifteen heating contractors have acquired Detroit refrigeration contractor licenses since an amendment to the city's refrigeration code last September made this possible, Frank J. Drogosch, chief safety engineer for the city, announced recently.

Three of them were granted Class B licenses and 12 acquired the new "restricted" license, Drogosch said.

A Class B license permits installation and servicing of refrigerating systems actuated by motors or engines of not in excess of 7½ hp.

A restricted license is limited to the installation of self-contained refrigerating systems used for air conditioning for human comfort and not exceeding 7½ hp. It does not permit servicing these systems.

The latter was established to permit heating contractors who sell year-round systems to make self-contained installations without hiring a refrigeration contractor to make the hook-up.

The amendment allows licensed heating contractors, when cleared by the gas and oil board of examiners, to take an examination for a refrigeration contractor license without meeting

the experience qualifications. They may choose to be examined either for a restricted license or for a Class B license, whichever they feel qualified to hold.

Reciprocally, a licensed refrigeration contractor, when recommended by the refrigeration examining board, can take an examination for a full or restricted gas or oil license.

To date, Drogosch said, only five refrigeration contractors (Concluded on Page 25, Col. 3)

Heating Section

NEWS IN THE HEATING FIELD will be found on pages 18 through 21 of this issue. Leading off on page 18 is a detailed report of the lively summer convention of the National Warm Air Heating & Air Conditioning Association held recently in San Francisco.

On page 21 you can read about warm air heating law revisions in Los Angeles and how one contractor sells equipment to new home owners who got inadequate builder-installed heating plants. On page 21 are details of Detroit PHI sponsorship of a radio newscast to gain public understanding of its program.

Although not included in the Heating Section, the editorial: "Wet-Heat-Type Furnace Manufacturers Strive To Revive In Air Conditioning" on page 12 is must reading for anyone in the field.

Fogel Addition Gives Straight-Line Production, Assembly In 3-Block Area

PHILADELPHIA—Fogel Refrigerator Co. here has announced the completion of a new one-story manufacturing building of 55,000 sq. ft.

This increases the total manufacturing area of the company to one quarter million square feet covering a three-block area, it was pointed out.

The new building will house a metal fabricating shop and modern baking and finishing facilities. Space formerly used for metal fabrication will be used for sub-assembly and final assembly. The additional manufacturing facilities will make the plant one of the most up-to-date in the industry, according to the company.

Buildings of the entire Fogel factory are located on the mainline of the Pennsylvania Rail-

road. The new building will have a siding which actually runs inside the building itself. This will make for quick loading and unloading in any weather.

"This completes an accelerated plant building and modernization program which gives the company up-to-the-minute straight line production and assembly facilities all on one level," it was stated.

Anaconda Joins 23¼¢ Copper Price Slash

NEW YORK CITY—Following similar action by Phelps Dodge Corp. and Kennecott Copper Corp., two largest copper producers in the nation, Anaconda Co. cut its price for

copper 23¼ cents a pound to 29¼ cents.

In line with the copper price reduction, Chase Brass & Copper Co., Revere Copper & Brass, Inc., Phelps Dodge Copper Products Co., and General Cable Corp., among the makers of copper goods, reduced prices for fabricated copper and copper alloys.

The new 29¼-cent price is the lowest since March 31, 1953. Last year, from mid-February to mid-July, U. S. copper prices were 46 cents a pound, highest since Civil War days.

In announcing its price reduction, Anaconda said that, effective July 1, it is trimming production at Yerington mine at Weed Heights, Nev. by 16%, or approximately 416 tons a month. The firm said this is being done to bring over-supply of copper into closer relationship with demand. Earlier this year, Anaconda cuts its Montana production by 2,000 tons a month.

N. O. Nelson Plans To Reorganize, Get Loan, Pay \$2.5 Million Owed

ST. LOUIS—Trustee in bankruptcy for the N. O. Nelson Co. filed a reorganization plan in Federal court here calling for full cash payment of \$2.5 million owed creditors and recognition of the validity of a loan made to the firm by Walter E. Heller & Co.

A hearing has been set for July 12. The Nelson company, refrigeration, air conditioning, heating, and plumbing supply house, went into bankruptcy in June, 1956 following dealings involving Bellanca Corp. and its president, Sydney L. Albert.

Funds for paying creditors would come from \$1.4 million accumulated by the company during the trusteeship, plus a new 18-month 6% loan of \$1,768,000 from Heller. The \$1.4 million was accumulated from

the sale of assets, liquidation of four branches, collection of accounts receivable, and reduction of inventories.

It is understood the new loan was worked out with Heller by Glenn Seydel, Davenport, Iowa businessman and his associates who purchased 96% of Nelson's common stock in April from Automatic Washer Co.

Reorganization plans call for recognition by N. O. Nelson of a \$3.6 million loan made by Heller to the firm and a subsidiary, Joplin Supply Co., in December, 1955. Last January, Elliott H. Stein, the Nelson trustee, filed suit against Heller, claiming the loan was fraudulent and void. This suit would be dropped.

Under the arrangement, interest on this loan would be reduced from the original 12% to 6% Oct. 18, 1956. Nelson still owes about \$1.4 million on this loan to Heller. The reorganization plan calls for subordination of this Heller loan to all other claims.

The reorganization calls for an offer by Seydel to buy the minority interest in Nelson at \$55 a share, or pay a dividend of \$33 a share as an alternative.

Congress Drags Feet On Excise Tax Cut

WASHINGTON, D. C.—Chances appear to be slim this year for Congress to complete action on an excise tax law revision.

The House passed and sent to the Senate a comprehensive, technical revision, but odds are the Senate will not act on the 428-page bill this year. However, sources say chances are considered good for Senate action next year.

Though the measure includes some relatively minor changes in rates and exemptions, most of the revisions would simplify or clarify present law.

Components for household refrigerators and freezers, under the proposed bill, would be freed of levies imposed by the present manufacturer's excise tax.

Mathes Heat Pump Sales Pump Profits Into Firm

WILKES-BARRE, Pa.—Sales of heat pumps manufactured by its Mathes Co. subsidiary have assisted in making net profit of Glen Alden Corp. in the first half of this year approximate the total for all of 1956, Francis O. Case, president, estimates.

Mathes accounts for about two-thirds of the GA net, Case noted, and 25% of Mathes' business is represented by year-round heat pump air conditioners. Net is expected to exceed \$1.4 million on total sales of between \$33 and \$35 million, after depreciation and depletion, Case said.

For 1956, net income of GA was \$1,613,446, equal to 91 cents a share on the 1,770,433 shares of stock outstanding. In the six months ended June 30, last year, net income of \$777,167 was reported, equal to 44 cents a share.

L


the hottest thing in LOW temperature

LOWEST in operating costs, too!
Kramer's new "L" THERMOBANK saves important dollars every day it works for you. It's the only LOW temperature automatic hot gas defrost system that works trouble-free at any temperature level, from plus 32° to minus 75°. Let us prove that it costs less to own the best!

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KRAMER TRENTON COMPANY
Trenton 5, New Jersey



KRAMER

Raise Sights

Home Building Perking Up; Starts Rise 'Significantly,' Labor Dept. Reports

WASHINGTON, D. C.—Strong hints that things are at last looking up for the home building industry came when housing statistics released for the month of May, and adjusted for seasonal factors, showed starts rose significantly.

May's rate was 990,000 units a year as compared with 940,000 in April and 880,000 in March. Actual starts in May were 102,000, including 96,000 private and 6,000 public starts, mostly military housing. In May, 1956, total starts were 113,700 and in April this year they were 92,000.

So far this year, the Labor Dept. reported, starts have totaled 405,800 units, about 15% below the total for the first five months of 1956.

FHA APPLICATIONS CLIMB IN MAY

As would be expected, applications for Federal Housing Administration mortgage insurance hit their peak for the year in May, climbing to the highest level since May, 1956.

Applications to insure 16,900 new homes were reported by FHA for May. This topped the 16,763 in April and bore out FHA officials' predictions that home building would rise.

'SLIGHT IMPROVEMENT' IN MORTGAGE MARKET

The FHA also indicated a slight improvement in the resale market for its 5% insured mortgages during May. This slight increase, according to agency officials, means that lenders had more money available last month for FHA mortgages.

Meanwhile, the Federal National Mortgage Association offered publicly a \$100 million issue of 4 1/4% debentures through its fiscal agent. This is the highest interest cost in Fannie Mae's history.

A brighter outlook was also given by Melvin H. Baker, chairman of National Gypsum

Southern Calif. Racca Urged To Buck Govt. Competition

SACRAMENTO, Calif.—A bill permitting the county of Los Angeles to do alteration and repair work of considerable value has been passed by both houses of the California legislature and awaits the governor's signature.

California refrigeration and air conditioning contractors were urged to make a last ditch stand against the proposal. It means government competition with private industry according to Henry Ely, executive secretary of the Refrigeration and Air Conditioning Contractors Association of Southern California, Inc.

New Dallas Store Separates Refrigeration, Appliances

DALLAS—A new appliance store has been opened at 3916-18 Gaston St. by L. A. Hurst.

"The new store will service and sell refrigerators, air conditioners, television sets, automatic washers, and ranges," Hurst stated. He added that the new store will separate the commercial refrigeration business from the appliance department.

Co. when he said "money for home mortgages is easing a bit, vacancy rate is low, and the number of families keeps rising. If this trend continues, starts should get back to something more than a million next year."

He saw tight money moving housing starts "down to around 900,000 units this year." There were 1,118,100 starts in 1956. "The longer range—that is, beyond the next 12 months—looks good," he commented.

4 More Tots Succumb In Death Traps; CARSES Booms Safety Drive

REDDING, Calif.—Two children, 4 and 3, were found suffocated in an abandoned refrigerator in a vacant lot next to their home here.

Alice and John Harvey were located after a two-hour search by their half-sister, Margaret Rudisill, 12. She had been baby-sitting while the parents, Mr. and Mrs. Gordon Harvey, were away.

Photographs and stories carried in Los Angeles newspapers caused the California Association of Refrigeration Service

Engineers Society to issue instructions for all members to continue the safety campaign until "there isn't a death trap left in the whole state of California."

CARSES President C. I. Marksberry said that should the accidents continue at this rate, unless something is done to stop them, "we may expect to equal the tragedies of 1953 when 30 children lost their lives in these mishaps."

In the meantime, two other deaths were reported in sepa-

rate parts of the nation. Lance Satterthwaite, who hid in an ice box in Orlando, Fla. after being punished by his mother, suffocated.

However, detectives said that no law had been violated because the 10-year-old lad was trapped in an out-of-service box stored in a garage.

It was not left standing in the open.

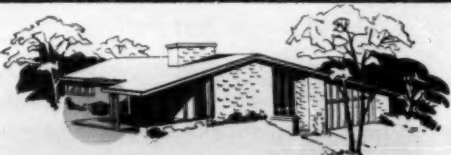
In Keesville, N. Y., a seven-year-old boy was found suffocated in an abandoned ice box at the rear of his home. Carl Fayette Estes had apparently crawled into the box and closed the door.

State police found the body after the parents had reported the boy missing.

THESE

McQuay

TWO UNIT AIR CONDITIONING SYSTEMS WILL MAKE SALES FOR YOU!



REQUIRES NO WATER MOUNTS ANYWHERE OUTDOORS

This new McQuay outdoor type condensing unit with built-in hermetically sealed compressor is air cooled and requires no water. It mounts anywhere outdoors—adjacent to the foundation, in the breezeway or even on the roof. It is compact, quiet and efficient, with exceptionally high capacity. An indoor control panel, and hi-lo safety control is standard equipment.



Air Cooled Condensing Unit with built-in compressor

One of these new air cooled two unit McQuay air conditioning systems will enable you to meet any specifications on either new or existing jobs. They are highly efficient, low in cost, extremely quiet, and feature the exclusive McQuay ripple-fin construction. Get the jump on your competitors. Look into these two unit McQuay air conditioning systems and sell complete air conditioning—for every possible job. McQuay, Inc., 1607 Broadway St. N.E., Minneapolis 13, Minn. Representatives in all principal cities.

2, 3 and 5 Ton Capacities

Air Conditioning

WITH PLENUM INSTALLATION.

The McQuay vertical "RE-V" type evaporator utilizes the furnace blower. Suitable for all types of forced warm air furnaces including counterflow. All McQuay units are bonderized and attractively finished. Available in 2, 3, and 5-ton capacities to balance the outdoor condensing unit.



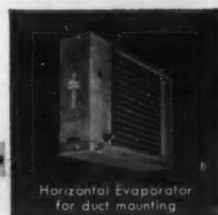
Vertical Evaporator for furnace mounting

OR

Air Conditioning

WITH DUCT INSTALLATION.

The McQuay horizontal "RE-H" type evaporator with forced warm air systems also uses the furnace blower. McQuay evaporators are also built in 2, 3, and 5 ton sizes to match the outdoor condensing unit. All are thoroughly insulated with fiberglass. Service panel and space for internal valve mounting is provided.



Horizontal Evaporator for duct mounting

OR

Air Conditioning

WITH REMOTE INSTALLATION.

The McQuay blower evaporator utilizes its own independent duct system, or may be used for direct air discharge. Ceiling mounted for use in systems lacking air capacity. 2, 3 and 5 ton capacities to match outdoor condensing unit. Drain pan for removal of coil condensate is built into all McQuay evaporators.



Blower Evaporator for ceiling mounting

Gives you complete air conditioning for every possible job!

AIR CONDITIONING • HEATING • REFRIGERATION



McQuay INC.

Cooling Off: Babies, Ammunition, Buses

Sign in Hollywood, Calif. appliance store: "Air Conditioners—Get Them While Their Hot."

Non-freeze steam coils were added to the 4,300 c.f.m. air handling unit recently shipped to the Fairbanks, Alaska Clinic by Drayer-Hanson. The unit is part of a year-round heating and cooling system.

Baby Kathleen Marie Heslin has a hole in her heart—but there's nothing wrong with the hearts of her father's co-workers on the Binghamton, N. Y. police and fire departments.

Suffering in the recent heat wave, 11-month-old Kathleen was sent to City hospital where, her doctor said, she must remain until the family can air condition her room.

Immediately, policemen started a collection for a ¼-hp. unit,

offered at cost by a local appliance distributor. With the aid of friends, Kathleen will be home to see that single candle on her birthday cake.

Members of the Missouri House of Representatives are going to try hard to get re-elected. After twice approving air conditioning for the House chamber, they finally have raised the \$100,000-plus to get it installed—in time for the next legislature.

"It's the cat's meow" purred 50 cats and 60 kittens as they inspected their new—but temporary—air conditioned quarters in the Helen Zarling Memorial Pet Adoption Center in Brooklyn. Prospective owners can view the contented felines and their 75 puppy friends through a picture window.

Conspicuously absent from the Fresno (Calif.) Bee's annual tabloid air conditioning supplement this year were evaporative coolers. In both advertising and editorial sections they were mentioned only as a matter of comparison. "Refrigerated" air conditioning got all the play.

Burglars entered the finance office of Cawthon & Hollums, East Point, Ga. appliance firm, gaining entry from the roof through an air conditioning duct. The thieves got around \$5,400 in cash and checks.

Another application has been found for air conditioning. According to The Trane Co., air conditioning can provide the ideal conditions for storage of ammunition.

Expert gunsmiths point out that ammunition should be

stored in a cool, dry place, away from cement walls and floors. Also, it is wise to provide for free circulation of air around ammunition cases. Air conditioning, says Trane, is the quickest and easiest way to meet these requirements.

One hundred of the 1,200 St. Louis Public Service Co. buses are now air conditioned, producing drivers who are courteous and accommodating even to the extreme of changing a \$10 bill, according to reports.

Cooled by a 5-ton modified version of a truck-trailer refrigeration machine, the coaches are equipped with special insulation and heat-resistant glass.

At present the air conditioned buses are used only on express service, with a minimum of door openings and closings. Cost of converting is approximately \$2,500 per bus, the company said. Twenty-five more buses will go into service by July 1.

Frigidaire Ups 2; McCormick Retires

DAYTON — Herman F. Lehman, General Motors vice president and head of Frigidaire Div., announced three executive changes in the sales and engineering departments.

F. H. McCormick, assistant chief engineer in charge of non-refrigerated products and a pioneer in the development of electric ranges, laundry equipment, dishwashers, and water heaters, will retire Sept. 1.

H. E. Van Scoyk, assistant chief engineer in charge of air conditioning and commercial products, succeeds McCormick.

William H. Anderson, Frigidaire's appliance sales manager, has been appointed assistant general sales manager in charge of the southern region.

A veteran engineer with 38 years in the appliance field, McCormick has made many contributions in the development of products for the home, it was noted. He joined Frigidaire in 1936 as chief range engineer, was promoted to manager of appliance engineering in 1938, and in 1941 was named assistant chief engineer.

Van Scoyk has been associated with Frigidaire for more than 28 years. He has been manager of process specifications, engineering division; assistant service manager, and assistant manager of direct factory sales.

During World War II, he served as manager of Frigidaire's War Production engineering division and was cited for his work on machine guns by the Secretary of War. He was promoted to assistant chief engineer in charge of air conditioning and commercial products in 1953.

Anderson joined Frigidaire sales promotion and training department in 1947 as supervisor of visual training. Four years later on the basis of merit in nationwide competition he was selected to receive the Alfred P. Sloan Fellowship for Executive Development.

COND-AIR AIR CONDITIONING UNITS

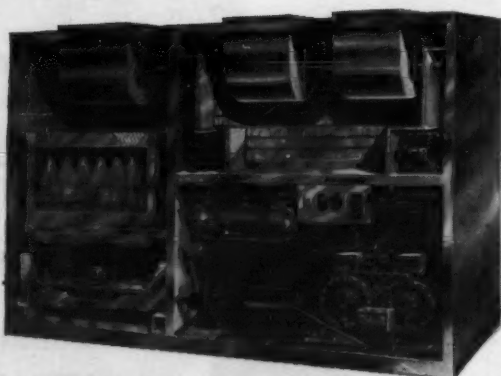
Quality second to none...

Priced Lower than you would expect!

COND-AIR air conditioning units offer you the best in quality...exclusive stainless steel evaporative condenser tank. Packages are factory assembled and attractively finished.

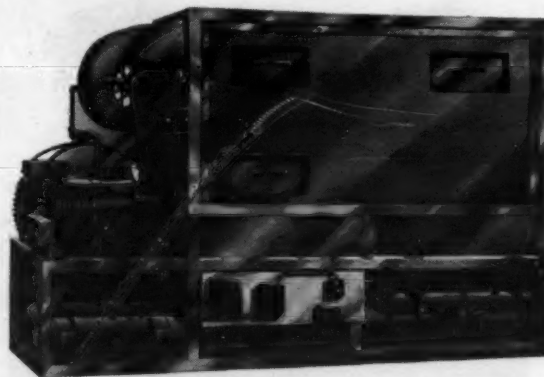
COND-AIR units are low in price, and they continue to save you money at every step of the installation...eliminate costly field labor, assembly work, cut installation to necessary field plumbing, high voltage, thermostat and sheet metal connections.

For top quality—and top economy—COND-AIR is your best buy!



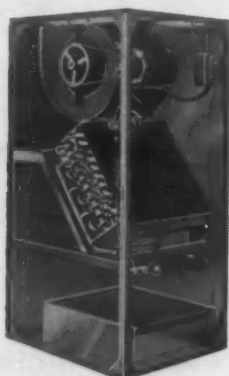
COND-AIR completely packaged
DIRECT EXPANSION UNITS

These units incorporate a compressor, evaporative condenser, and air handler in one complete package. Available in 2, 3, 5, 7½, 10, 15 and 20 ton capacity. (20 ton capacity, Model EC 200 H, illustrated.)



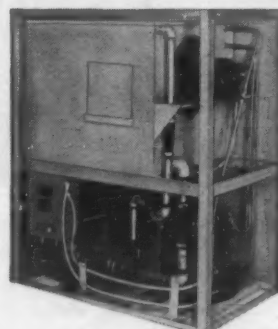
COND-AIR completely packaged
WATER CHILLERS

These units incorporate a compressor, evaporative condenser, and chiller in an easily installed complete package. Available in 5, 7½, 10, 15 and 20 ton capacity. (15 ton capacity, Model WC 150 illustrated.)



COND-AIR completely packaged
AIR HANDLING UNITS

These units are available in up-flow, down-flow, vertical or horizontal models. Sizes range from 3 to 10 ton capacity. (3 ton capacity, Model VAH 30, illustrated.)

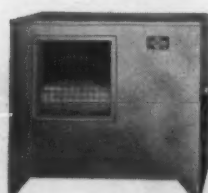


COND-AIR completely packaged
"HIGH SIDE" SECTIONS

These units incorporate a compressor and evaporative condenser in self-contained complete packages. Available in 3, 5, and 10 ton capacity. (3 ton capacity, Model ECR 30 R, illustrated.)

There are still some exclusive COND-AIR franchises available. Write today for information about your area.

Now COND-AIR



completely packaged Year 'Round
AIR COOLED Conditioning Units

These units include companion furnaces and precharged quick-connect lines as optional accessories. They are available in 2, 3 and 5 horsepower models.

Just look at these COND-AIR features!

- Low price
- Easy installation
- Requires minimum of servicing
- Adaptable and flexible
- Economical operation

Cond-Air
DIVISION

Write today for prices, literature and information about your next installation.

ELLIOTT ENGINEERING COMPANY

2800 EAST CENTURY BOULEVARD • LYNWOOD, CALIFORNIA

If these dimensions
are your problem
COOLENHEAT
has the Coil to fit



EVAPORATORS
CONDENSERS
WATER—STEAM AND
NON-FREEZE STEAM
IN ANY SIZE OR CAPACITY

SPECIAL COILS WITH
COPPER OR ALUMINUM FINNS
MADE TO YOUR DIMENSIONS
AND SURFACE REQUIREMENTS

COOLENHEAT, INC.
33 MAIN ST.
WOODBIDGE, NEW JERSEY

Putting Supermarkets To Work

Heat, High Traffic, 10% Down
Seen Giving Room Units Push

THIS DISPLAY will take only a 5-ft. by 3-ft. space in a supermarket. With it, F. I. Davison of Toledo expects to put 20 or more supermarkets in the air conditioning business this summer.



By George M. Hanning

TOLEDO—A plan to sell room air conditioners through supermarkets is being tried this summer by F. I. Davison, president of Davison Associates, Inc.

Davison, who is the local "associate manufacturer" for Mathes air conditioning units, said the low-priced Mathes unit is giving him an opportunity to try a sales idea he has nurtured for a number of years.

NEEDS ONLY 5X3 FT.

In exchange for a display area of 5 by 3 ft., Davison offers the supermarket operator a full dealer-discount on the units. This will give the operator a higher return on the space invested than any similar area in the store, Davison believes.

The display will consist of three sizes of Mathes units topped by a poster offering a unit for monthly payments as low as \$11.50, after a small down payment.

The sign also informs the prospect that the units are guaranteed, installed, and serviced by Davison Associates, which has 35 years' business experience in Toledo.

"All the dealer has to do is get the 10% down payment from the customer," Davison said. "We take over from there. We make the installation and handle the financing. And we will follow up with any service that is necessary."

HAS 20 LINED UP

Davison said that he already had 20 supermarkets lined up to handle the line this summer. He is waiting for hot weather to set in before setting up any displays in stores, however.

"If we wait until the weather gets hot, shoppers will be more apt to inquire about the units and buy them. This activity right off the bat will encourage

the store operator to push sales.

"On the other hand, if we put in the displays while the weather is cool, he may not get much initial activity. He would get discouraged and would start thinking of yanking the display."

Considering the tremendous traffic through supermarkets, Davison believes that this high level exposure will produce a high volume of sales.

As a commercial refrigeration distributor of long standing, he has a wide acquaintance with supermarket operators and has won their confidence in his ability and willingness to back up his product.

He is counting on this prestige to give him an entry to supermarkets and to gain acceptance for a newly introduced brand in this area.

With a well-organized 35-man service and installation department behind him, he feels prepared to handle any volume.

5 Queries Room Conditioner Prospect
Should Ask Self Offered by N.Y. BBB

NEW YORK CITY—A new pamphlet entitled "Things You Should Know About Room Air Conditioners" has been prepared by the Better Business Bureau of New York City, Inc.

The pocket-size pamphlet, it was pointed out, answers key questions that prospective purchasers should ask themselves before buying room coolers; such as, What is a room air conditioner? How much cooling do I need? What about cooling capacity and B.t.u.? And, How is the wiring in my home?

Such other important factors as electrical current requirements and consumption costs are also discussed in the pamphlet.

In summary, the pamphlet urges the following:

- (1) Know your dealer.
- (2) Find out the size of the

room, number of openings, what insulation there is, and the other factors affecting the temperature and humidity and get advice on the approximate cooling capacity you need to do an adequate air conditioning job.

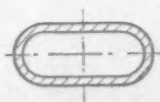
(3) Find out the B.t.u./hr. capacity and electrical requirements of the air conditioner you intend to buy to see whether it is adequate for your conditions.

(4) Learn whether the wiring and electrical installations in your home, or your apartment building, are sufficient for any air conditioner, or for an air conditioner of the particular cooling capacity you will need.

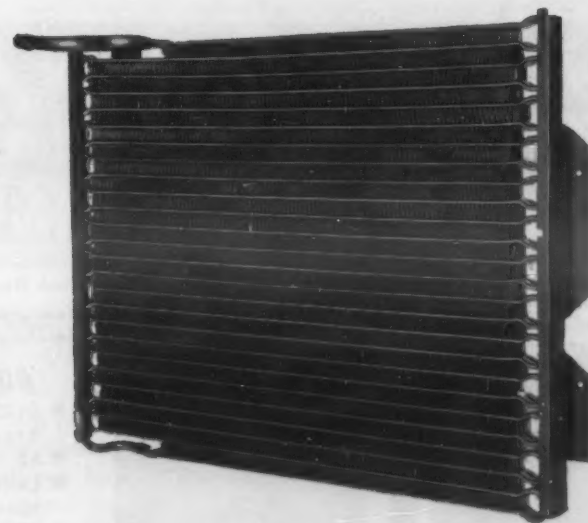
(5) Ask what the price includes, and whether there are extra charges—and the amount—for window installation, service, etc. And get it all in writing.



Hot and bothered by tubing problems?

NEW GM STEEL TUBING "FLATTENED SERPENTINE"
HELPS HARRISON COOL AIR BY THE CARLOAD

New Harrison Air Conditioning Systems for the '57 GM line use new "flattened serpentine" condensers of GM Steel Tubing. This exclusive development provides more contact area for a better bond, lets less tubing handle a higher heat-transfer volume . . . cuts size and weight, boosts efficiency and strength. It's another GM Steel Tubing "first" . . . and typical of the resourceful engineering service that's ready to go to work on your product problems. Check Sweet's Product Design File 1a/Ro, write us direct or call your Rochester Products Sales Engineer.



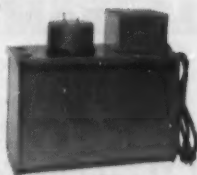
GM STEEL TUBING BY



ROCHESTER
PRODUCTS
DIVISION OF
GENERAL MOTORS
ROCHESTER N.Y.

Amco
CONDENSATE PUMPS

- ★ 20 FT. HEAD
- ★ FLOAT CONTROL
- ★ QUIET-HEAVY CONSTRUCTION
- ★ PLUG IN PRE-WIRED



AMERICAN COMFORT MFG. CO.
2401 MAIN ST. EVANSTON, ILL.

Dallas Air Conditioning Code--

(Concluded from Page 1)

executive secretary of the association, stated.

After more than a year's work, the ultimate draft was accepted both by city authorities and the association.

Assistant City Manager Scott McDonald said the new ordinance only consolidates other regulations in the electrical, plumbing, and building codes.

ONLY OMTS ROOM UNITS

It applies to the installation only of all units except "self-contained room air conditioning or cooling units in residential structures when no structural alterations to the building are required; connections are made to an existing electrical outlet through a factory installed conventional cord and plug using existing approved outlets; drain connections are made to existing connections which have been installed by licensed plumbers; and the rating of the unit does not exceed 1 hp. and the size of the blower motor does not exceed 3/8 hp."

For equipment covered, it requires the taking out of a permit and the payment of a fee to cover city inspection after installation.

SET FEE AT \$1 PER 12,000 B.T.U. SIZE

For air conditioning equipment the fee is set at \$1 per 12,000 B.t.u. capacity or major fraction thereof.

For heating equipment, the fee is \$5 for each unit with a capacity up to and including a 200,000 B.t.u. input rating. For each additional 25,000 B.t.u. input rating, the fee jumps 25 cents.

For combination heating and cooling systems, the output shall be calculated for each and the fee paid for the combined total.

For ventilating systems, the fee is \$1 for each blower or fan plus 50 cents for each remote outlet or inlet.

If work should be started before a permit is obtained, the

above fees are doubled.

The code spells out what tests will be made on the equipment. Air conditioning systems will be inspected for tightness of connection of refrigerant piping and shall be tested to ascertain the delivery of air to all parts of the system and for proper operation of safety devices.

Equipment, materials, power, and labor necessary for the inspection and test are to be furnished by the installing contractor.

If all is according to code, the inspector will issue a certification of approval. Without this certification, no installation can be placed in operation.

If code provisions are not complied with, the inspector will notify the contractor of the defects. If, after a reasonable search, the inspector cannot find the contractor, he can post the notice in a conspicuous place at the installation site or mail it to the contractor's last known address. This, the code says, will be the equivalent of personal service of the notice.

If defects or deficiencies are not remedied or abated after proper notification, the inspector may declare the installation hazardous and unsafe. Then the installation will be disconnected from all water, sewer, gas, or electrical lines until the defects have been corrected.

OTHER REQUIREMENTS

Some of the other requirements of the code for air conditioning installations are as follows:

"Furnaces, boilers, heating and cooling system units shall have attached thereto a name plate conspicuously placed on the exterior surface which shall contain the model number of the unit, manufacturer's name, and whenever possible, the B.t.u. rating of the unit and approved clearances and shall be installed in accordance with the terms of its approval.

"Refrigerant containing units and joints located in an air duct shall be constructed to with-

stand, without leakage, a temperature of 1,000° F.

"Refrigerating units of more than two tons capacity using water-cooled condensers shall be equipped with cooling towers and recirculating pumps.

Installation in accordance with the ASA-B 9.1 safety code for mechanical refrigeration shall constitute prima facie evidence of compliance.

PRECIPITATOR SWITCH

"Electric precipitators shall be provided with interlock switches so as to prevent electrical shock when removing or servicing the filters or when removing the electrostatic unit.

"Electric precipitating filters shall be equipped with a condenser discharging device or a time lag of access to filters to permit complete discharge of filter plates and ionizing units and shall carry Underwriter's Laboratory approval for the application involved."

The code defines an air conditioning system as "any mechanical arrangement consisting of appliances, units, or parts from or by which heated, cooled, humidified, or dehumidified air is distributed by means of ducts, pipes, or otherwise and shall include any and all accessory apparatus and equipment installed in connection therewith."

Air conditioning, as the term is used in the code, "is a system using mechanical means for the movement of air, treatment of air, humidifying or dehumidifying or filtering of air, and used for heating or cooling; including warm air heating systems, plain ventilating systems, combination heating and ventilating systems, air cooling systems, refrigeration systems, exhaust systems, and evaporative cooling systems, but shall not include systems for removal of flammable vapors and residues nor to systems for conveying dust, stock, or refuse by means of air currents."

Not covered by the code are mechanical refrigeration used as an aid to or a part in a chemical process within a manufacturing plant or used in the preparation and preservation of food.

Year-Round Coolers Bared

NEW YORK CITY — Two year-round air conditioning systems for multi-room buildings of all types were displayed by the Plumbing & Heating Div. of American-Standard at the Building Owners and Managers Show here June 23-27.

The new products were shown in the Astor Gallery of the Waldorf-Astoria hotel which recently installed American-Standard year-round comfort units in more than 600 guest rooms, it was reported.

Sharing display honors at the Plumbing & Heating Div. booth was a new floor-mounted version of the "SR 'self-contained' Remotaire," used in the Waldorf, and a new "Vertical Remotaire" unit for commercial installations—office buildings, apartments, and schools.

The SR Remotaire system is designed to simplify installation, yet retain individual room control, the company said.

Heating is supplied by a steam or hot water coil in the individual room unit which is connected to a central heating system. Cooling is supplied by a self-contained, air-cooled refrigeration circuit in each unit. Major refrigeration components are located in the wall.

The Vertical Remotaire, a fan-coil air conditioning unit 9 in. deep, is designed for central plant applications employing hot water and chilled water. Individual unit controls come in a variety of arrangements.

Airtemp Booth Pushes In-Wall Conditioners

DAYTON—Airtemp Construction Div. of Chrysler Corp. sponsored a display of air conditioning products at the National Association of Building Owners and Managers Exhibit, Waldorf-Astoria hotel, New York City, June 23-27.

The company showed several models of air conditioners designed for office buildings, apartment buildings, hotels, and motels. "Imperial All-In-Wall" and "All-In-Window" room air conditioners were featured.

In the New York area alone, five major new apartment developments have been equipped with All-In-Wall Imperials, it was noted. Manhattan's Coliseum Park Apartments, currently nearing completion, are being outfitted with 1,350 of the built-in-the-wall conditioners.

Compressors--

(Concluded from Page 1)

and compressors designed for ammonia refrigerant) were up about 4% in the first quarter, compared with last year, it was reported to ARI by members whose output is estimated at more than 90% of the industry.

Actual shipments for the three-month period totaled 1,392,854 units, compared with 1,344,393 in the first quarter of last year.

Of the 1957 quarterly total, 91.3% of all non-automotive compressor bodies were sold as such, or in compressors or condensing units. The remainder, 8.7%, were sold in unitary end-use products, such as room or self-contained air conditioners, display cases, food freezers, or commercial refrigerators.

Other manufacturers purchased 87.4% of the total output, with 12.6% going to non-manufacturers, distributors, jobbers, dealers, and retail customers.

Figures on manufacturers' shipments, broken down by categories, together with names of reporting companies, follow:

MANUFACTURERS' SHIPMENTS OF COMPRESSOR BODIES PRODUCED BY REPORTING COMPANIES

(Except for household refrigerators)

Horsepower*	Shipments Including Exports	
	March, 1957	Jan.-March, 1957
1/2 & under ...	53,712	125,913
3/4 ...	81,456	206,873
1 ...	25,494	58,167
1 1/2 ...	8,887	25,469
2 ...	45,732	169,054
3 ...	161,333	364,353
4 ...	39,891	113,614
5 ...	37,239	96,644
6 ...	11,590	28,921
7 ...	8,710	23,018
8 ...	6,036	14,307
10 ...	1,198	3,128
15 ...	381	905
20 ...	246	631
25 ...	175	494
30 & over ...	599	1,641
Total ...	482,679	1,233,132
For Ammonia Refrigerant—Total ...	126	369
For Automotive Air Conditioning—Total ...	53,924	159,732
Grand Total ...	536,729	1,393,233

*For all refrigerants except ammonia (excluding units for automotive air conditioning).

This summary includes all compressor bodies shipped by the reporting companies regardless of whether they were shipped separately or incorporated into a condensing unit or unitary end-use product (such as a room air conditioner, display case, freezer, or commercial refrigerator). Shipments for export are included. Shipments for household refrigerators are not included.

In order to avoid duplication of reporting, shipment figures were requested only from companies that assembled the machined compressor casting with the components necessary to make a complete compressor or motor-compressor assembly.

Reporting companies: Airtemp Div., Chrysler Corp.; Bendix-Westinghouse Automotive Airbrake Co.; Brunner Mfg. Co.; Carrier Corp.; Copeland Refrigeration Corp.; Curtis Mfg. Co.; Refrigeration Div.; Frick Co., Inc.; Frigid-Aire Div.; General Motors Corp.; General Electric Co.; Kelvinator Div., American Motors Corp.; Lehigh, Inc.; Tecumseh Products Co.; Trane Co.; The Vilter Mfg. Co.; Westinghouse Electric Corp.; Worthington Corp.; York Corp., subsidiary of Borg-Warner Corp.

"King Zeero's" Sweet Water ICE BANKS offer ICE - CONCENTRATED Refrigeration for Air Conditioning

CONTINUOUS RIFLED GALVANIZED COILS 32°-34° COLD EXPANSION VALVE CONTROLLED ICE WATER DESIGNED FOR USE WITH: FREON METHYL CHLORIDE—AMMONIA

The "King Zeero" ICE BANK is designed for air cooling in Churches, Mortuaries, Theatres, Offices, Stores, Auditoriums, Factories, Clubs, Restaurants, etc. Ice Banks may be added to existing systems for increased capacity. The "King Zeero" ICE BANK is designed to deliver 32° to 34° F. sweet water for recirculation through secondary equipment. Design temperatures may be obtained with mixing valves.



MODEL A-7 "KING ZEERO" ICE BANK

CONSIDER THESE ADVANTAGES--

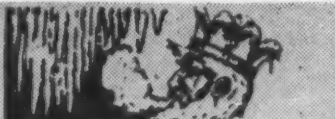
- DIRECTED COURSE OF WATER travels with "built-in" agitation.
- NO MECHANICAL AGITATION REQUIRED.
- LARGE WATER COMPARTMENTS spaced on 11" and 12" centers.
- 33% EXTRA ICE CAPACITY safely attained with up to 300 G.P.M. water flow.
- ICE IS "BURNED OFF" PLATE COILS progressively, exposing prime and secondary surface for maximum flash cooling capacity.
- ICE THICKNESS automatically controlled - eliminates "freeze ups."
- 94 SIZES to fit space requirements. Other designs for special applications.

CAPACITIES - 500 lbs. to 30,000 lbs. (72,000 B.T.U.'s to 4,320,000 B.T.U.'s) in a single unit. Multiple units may be installed.

THE KING ZEERO COMPANY

4300-14 W. Montrose Ave. - Chicago 41, Ill.

Manufacturers of Ice Builders - Ice Builder Cabinets - Ice Banks



Call on GLO-BRITE for

Molded Fabricated



Dow Styrofoam Koppers Dylite

EXPANDED POLYSTYRENE PARTS FOR REFRIGERATORS, FREEZERS, AIR CONDITIONERS, LOW TEMPERATURE ENCLOSURES, PIPE COVERING.

Low Temperature Insulation Shaped or Molded Precisely to Your Specifications.

GLO-BRITE PRODUCTS, INC.

6415 N. California Ave. Chicago 45, Illinois

Redmond MICROMOTORS

One of largest stocks in the world!

FACTORY DISTRIBUTORS

MARVIN L. "FERGIE" FERGESTAD

CYCLO-FREEZE CORP.

6318 Cambridge, Mpls. 16, Minn.

West 9-6794

Electronic Brains Generate Heat

Double Blower Units Draw Heated Air Through Hood Past Cooling Coils, Recirculates To Condition 'Mental Marvels'

EVANSTON, Ill. — In these days of electronic and mechanical miracles, the applications for air conditioning equipment are many and varied. A case in point is the use of 3-ton "Krack Komfort Master" air conditioning units to cool two of Remington Rand's "Univac" machines in the new home office of General Finance Corp. here.

The Univac machines were installed in the new \$1,000,000 building shortly after the doors were opened in March, 1956. The two Krack units appeared on the scene some four months later.

Located in the tabulating room of the spotless building, the Univacs have shouldered the burden of the tremendous volume of computations required by the company's far-flung finance operations. The job is a big one, for General Finance includes 159 branch loan and discount offices throughout the country. All major tabulating and computing work is forwarded to the home office for handling.

'Hurryup Call For Cooling'

In performing their myriad tabulating functions, the two Univacs generate a lot of heat. Hundreds of thousands of electrical connections function throughout the day, constantly building heat under the machines' metal covers. This heat build-up posed a problem which sent out a hurry-up call for special air conditioning equipment.

"We found that the heat generated by the Univacs created a double problem," Ralph Beck, the company's assistant controller, explains. "First, unless the temperature inside the machines was held under 90°, they would short out due to overheating. This involved frequent work stoppages. Then, too, the heat emanating from the Univacs' metal casings caused discomfort to tabulating employees working close to the machines.

Suggests 3-Ton Conditioners

"We explained the problem to Phil Marcus of Utility Air Conditioning & Heating Co., who supervised installation of the building's general air conditioning system. He suggested that a pair of 3-ton Krack air conditioning units, equipped with specially designed sheet metal hoods, might prove the answer—and he was right."

The units selected for the job of cooling the Univacs are Komfort Masters, model CM240, manufactured by Refrigeration Appliances, Inc., Chicago.

The double blower units are each equipped with two large centrifugal type fans, complete with three-speed control. The fans are powered by ½-hp., 110-volt, single-phase motors. Other components include a 6-row water coil and 16 by 25 by 1-in. filter in each unit. Face area is 2.40 sq. ft.

Suspended from the ceiling over the Univac machines, the Krack units operate in conjunction with the building's main air

conditioning system. A specially designed hinged hood is joined to the bottom of each unit, by a short, 18-in. wide duct. The hood fits closely over the top of the Univac machine.

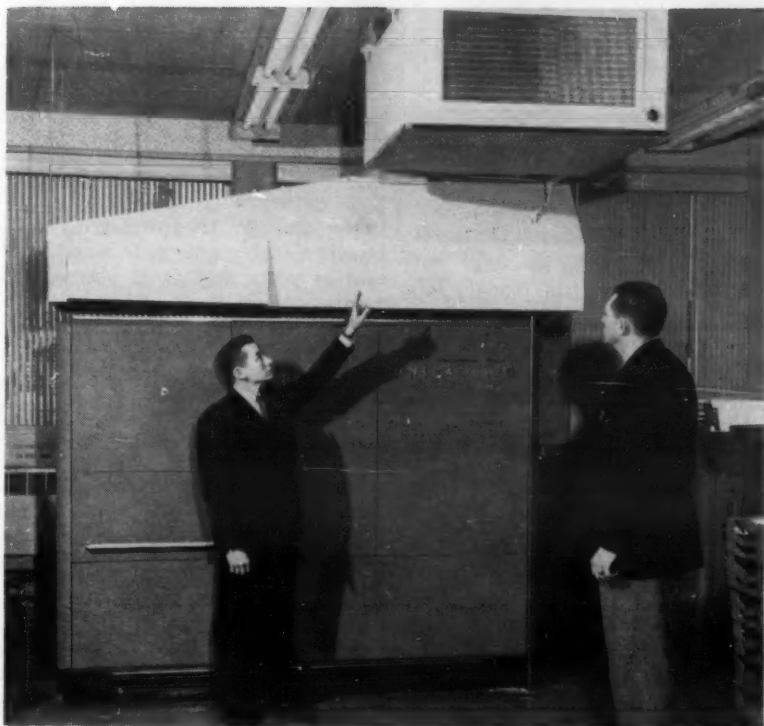
Resembling an inverted pontoon, the long hood traps the warm air as it rises from the Univac. The direct-drive fans in the Komfort Masters then draw air up into the cooling section, where it is cooled as it passes over the coils. The fans then send the cooled air out the front of the unit and into the room.

A volume control damper on the Komfort Masters permits air velocities to be adjusted if

desired. Each of the two units is capable of moving 1,200 cu. ft. of air per minute.

How well have the Krack air conditioning units solved the twin problems posed by Univac's heat producing tendencies? "They do a fine job," Beck asserts. "Since the units were installed, we've had no heat problem of any kind with the units."

EXPLAINING this "Krack" unit's performance to Gordon Goethal (r.), General Finance personnel manager, is Don Croeger of Refrigeration Appliances, Inc. The specially designed sheet metal hood traps heated air rising from the "Univac." The air is then drawn through the 3-ton "Komfort Master" over the coils and back into the room as cool air.



SO HALSTEAD & MITCHELL ENGINEERS SAID:

NOW - YOU CAN BUY
AN AIR-COOLED
CONDENSER
WITH LIFETIME
HIGH CAPACITY

TURBU-FLO FINNED COILS WON'T CLOG



Here is the industry's finest air-cooled condenser using the exclusive non-clog "Turbu-Flo" finned coil. In this most efficient Halstead & Mitchell design, wide fin spacing prevents

the coil clogging with air-borne dirt and other particles which cause a quick loss in condenser capacity. Thus, Halstead & Mitchell's high condenser capacity is built-in, for lifetime operation.

As a best starting point, Halstead & Mitchell uses a generously big coil, with fins spaced 6 to the inch. This means a low pressure drop, which in turn means high operating efficiency. The "Turbu-Flo" fin itself contributes to an extra-measure of heat transfer, providing a marked turbulence of air flow over the finned surface. This results in increased heat transfer due to lowered air film resistance. Thus, there's a generous reserve of capacity in these Halstead &

Mitchell Air-Cooled Condensers—capacity which will stay high for the life of the unit.

The exceptionally rugged construction, the manifold for easy multi-circuiting, and the right price make Halstead & Mitchell air-cooled condensers preferred by contractors everywhere. More details are yours for the asking—write for free Condenser Bulletin. Halstead & Mitchell, Bessemer Building, Pittsburgh 22, Pa.

AT LEADING WHOLESALERS EVERYWHERE



Inside Dope

By GEORGE
F. TAUBENECK

(Continued from Page 1, Col. 1)

All Shook Up

Plenty of others are "all shook up" over the price problem, too. After reading our stuff on price-cutting Clarence Hatch of the Campbell-Ewald advertising agency (a fellow with extensive merchandising know-how) contributed these pregnant thoughts (which hereafter are condensed):

Perhaps the margin of difference between your price and the other guy's isn't as big as it seems. Check the meaning of the price in terms of down payments, terms, etc. Does your competitor's slashed price buy the same features that your price buys?

In a refrigerator, for example, does it include five ice cube trays or just three? Does it cover any color combination, or just white? Are you sure the models are comparable?

Regardless of the competitor's new price, why not take your price and go to town with it? Display it big on your windows and in your ads as if you were really proud of it. Give people the impression that your price, regardless of competition, is sensationally attractive.

Use your ingenuity. Be inventive. Concoct a "sale" of your own based on an idea that will offset any old price-cutting appeal. Dream up a new name for a sale, a new gimmick, a new lure. A little warm imagination will go a long way to neutralize a cold price reduction.

Advertise down payments. Advertise terms. Figure out some way to drag 'em in with their old, used appliance. Give

an impression that all hell has busted loose in your place, and that your merchandise is moving like mad.

Above all, get off your duff and light some fires. Stir up excitement for your store. Launch a big advertising campaign in newspapers or radio. Center attention on your store, and make it sound and look and behave like you're dropping the biggest merchandising bombshell of the year.

Jud Sayre's Thoughts

And that master merchandising veteran, Judson S. Sayre of Norge, writes:

"I think you have covered just about everything in your editorial on price cutting.

"The difficulty as I see it, George, in today's debacle is that every one of the top managements of the larger companies have been told by their sales departments that they were going to do 25% more business this year. Consequently, they geared their expenses, production, and advertising on this ratio.

"This business did not materialize and because of the greatly overstocked condition everybody is now trying to get rid of their merchandise, which creates all the things you have outlined in your editorial.

"As the philosopher, Santayana, said: 'Those who cannot remember the history of the past are condemned to repeat it.' It seems to me that everybody today is committing the same sin."

Letters to the Point

Typhoon Air Conditioning Co.
Brooklyn, N. Y.

Editor:
Your editorial on "Antidotes for Price-Cutting In Your Own Backyard" is most timely and to the point. It is difficult to add something to a "work of art."

The matter of low price has always existed, but now manufacturers are contributing by example to the general situation that exists today.

The industry should be training men to sell for more money to make legitimate profits instead of vying with each other for sales at low prices, rewarded by prizes and trips.

DON V. PETRONE

B & D Air Conditioners, Inc.
Orlando, Florida

Editor:

We are enclosing copy of letter and enclosures as sent to the Orlando Better Business Bureau concerning the false, fictitious, exaggerated, and deceptive advertising and promotion of window units in this area.

HARLOW G. FREDRICK

Confirming our telephone conversation today, I am enclosing herewith an article copied from AIR CONDITIONING & REFRIGERATION NEWS, 1957 and also a reprint from another issue of the same trade paper. The facts mentioned in these articles are prevalent in this area today.

As mentioned in the articles, very few people know that a full ton of air conditioning is 12,000 B.t.u. We do not know of any units that put out 12,000 B.t.u. in a 1-hp. size in a window unit. We know of some putting out 10,800 B.t.u. in a 1 hp. which we believe is top. If advertisers would use the words horsepower and put the amount of B.t.u. of cooling after the amount of horsepower, then the public would have a better idea of what they are buying.

If we could add the words "and tonnage" to the first paragraph of the article enclosed so it would read "—and use of fictitious list prices and tonnage" we might be somewhere nearing a solution.

This type of advertising abuse is very damaging because it sets up a false, deceptive, and expectant hope in the minds of people, many who want to believe it. We find it embarrassing and time-consuming to constantly tell people of the deception. On too many occasions we find where they do buy an inadequate unit there is a complaint against the unit (a common practice which is very detrimental to air conditioning) not being any good when, as a matter of fact, the unit is putting out all it is supposed to and it is another case of the customer being sold an inadequate size either through ignorance or deception or both.

We wonder how long it will take manufacturers and in some cases distributors to find out just what this sort of deception is doing to the air conditioning industry. When will the manufacturers and distributors learn that air conditioning is a

very technical business and air conditioning in any sizes or capacities should be sold, installed, and serviced by air conditioning people, not appliance dealers, filling station operators, television dealers, and others who are not properly qualified?

We have actually had air conditioning "salesmen" call on us to sell us window units when they could not answer simple questions concerning the units.

There is no doubt that a general education concerning air conditioning—what it is and what it does—is vitally needed today.

Until such time as there is an effort toward doing this, I guess manufacturers, distributors, dealers, and whatnot will go on beating their so-called brains out trying to meet competition which really should not exist.

HARLOW G. FREDRICK

Mr. Hunt Makes Sense —A Brilliant Letter

Hunt Heating Co.
Grand Rapids, Michigan

Editor:

Let me say it is about time that the intelligent people in this field are beginning to wake up. To show even a little concern is an indication that at long last they are beginning to realize all is not well and maybe something should be done.

Apparently every dealer is taking a crack at the manufacturer who in his honest search for the maximum in distribution has gone to any available store or outlet to sell his product. The number of manufacturers, madly scrambling for this market have "sold" a lot of appliance dealers, auto accessories stores, supermarkets, and department stores on the idea of merchandising air conditioners, particularly the window type.

This huge number of retail outlets other than bona fide air conditioning people, have resulted in a surplus of products being placed on the market; but the retail sales have not kept up with the pace, and consequently price slashing has appeared.

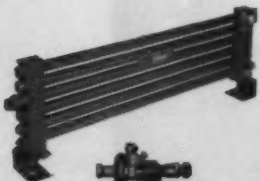
Window air conditioners are being sold where a central plant might have been sold, but once a person has one window unit in his house it is much

(Concluded on next page)

HIGHSIDE or LOWSIDE heat-x Refrigeration and Air Conditioning Products mean a better installation

The Heat-X line includes components for refrigeration and air conditioning systems as well as completely "packaged", ready-to-operate units... all in a wide range of sizes and capacities to fill a broad variety of contractors' needs.

All Heat-X equipment is soundly constructed, conservatively rated and features the most advanced engineering design.



'CIC' CONDENSERS An efficient water-cooled refrigerant condenser. Entire water circuit is of non-ferrous construction with cleanable tubes. Inner-fins in refrigerant tubes insure high heat transfer... occupy minimum space. FROM 1/2-15HP



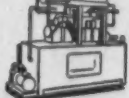
CAST COOLERS Refrigerant and liquid circuits are cast in solid block of aluminum, eliminating freeze-up problem... offering advantages of "hold-over" effect of cooled aluminum mass. FROM 15-65 GPH (@ 70°)



HEAT INTERCHANGERS Cast aluminum heat interchangers (1/4-10HP) and heavy duty heat interchangers (7 1/2-100HP) feature patented Inner-Fin construction in suction line. Units feature low freon charge and no oil trapping.



'OSM' OIL SEPARATOR MUFFLERS These units solve two problems common to refrigeration systems: silencing of system noises and separation of all entrained oil. No floats to bang open or stick closed. 'OSM' units are equipped with a positive-action Velocity Pressure Mechanism, 1-75 TONS exclusive with Heat-X.



Bulletins containing complete specifications FREE on request

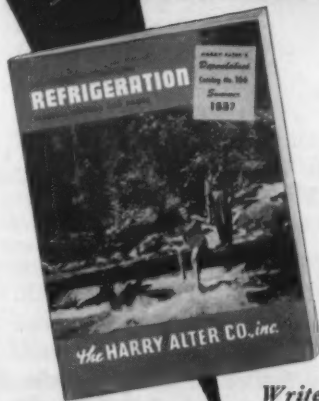
HEAT-X, Inc.

BREWSTER • NEW YORK

Cable "BUSHEATX", Hartford, Conn.

REFRIGERATION is our SPECIALTY

Air Conditioning and Electric Motors, Too!



OVER 10,000 ITEMS... the world's most comprehensive listing of parts and supplies... appear in the Harry Alter DEPENDABOOK No. 166 Summer, 1957 complete with illustrations, descriptions, prices and other useful information.

SAVE MONEY, time and effort by ordering the parts you need from this compact, easy-to-read, up-to-date catalog.

Write on your letterhead for the DEPENDABOOK

**PARTS
and
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For more information about products advertised on this page use Information Center, page 16.

Inside Dope

By GEORGE
F. TAUBENECK

(Concluded from preceding page)

cheaper to add another than to purchase a central plant.

This plus the price slashing has done much to reduce the demand from the dealer to the jobber or manufacturer and to reduce profits all the way around.

There is an answer, mine, but it will never come about simply because we are not organized and I will explain that shortly.

If the legitimate air conditioning and heating dealer will first realize that they must be able to provide the outlets for the manufacturer that he is entitled to, and by that I not only mean in number but a modern showroom with competent sales help to sell these items, financing, and promotion, he can then be considered by the manufacturer as a potential retailer for his products.

The greater number of air conditioning dealers are operating out of showrooms that look more like a garage than the appliance store or an air conditioning display in a department store.

The woman of the house shops in the better stores, she likes clean showrooms, neat and intelligent sales help, and a view of the various models.

Very few of us can offer even this much to the manufacturer. Can we offer comparable promotions and advertising? No, we cannot and do not. Either we do not have the money (because all of our jobs are so profit-less) or if we have it we don't want to spend it.

Net result, we have nothing to offer the manufacturer so he is FORCED to look for other outlets for his products.

Then we have the matter of who is in a position to have the technical knowledge of air conditioning—and now I mean central plants. We all feel that we have, that is not the argument here.

The basic problem in the Air Conditioning and Heating Industry is simply, that it is too easy to get into it.

The men who work for a short time for a contractor can with a little fortitude and a bag of tools become contractors at a moment's notice. All it takes is one sale. The restrictions placed on a person who wants to get into this field are at an absolute minimum.

We heating contractors are responsible for that. Our industry, at the national level on down through the State, City, and County has done little (bigger cities have started) to set up proper periods of training, licensing, and examination to insure the manufacturer and the consumer of our ability.

If there were 50% less Air Conditioning and Heating contractors in the United States, prices and profits would increase substantially. Without increasing your present help or equipment, but with an increase of 50% in your volume, how many cheap or close margin jobs would you take? The answer is simple: none.

If the qualifications for a man to enter either the Air

Conditioning or Heating field were such that he had to really qualify and was competent to run a business, he would not be interested in cutting prices but would be more inclined to sell his jobs and make a profit, knowing that his competitor was thinking the same way.

The average dealer should realize that in order to be in a position to complain about a manufacturer or a retail outlet, he must first be in a position to offer the manufacturer and the public his services on a like basis. He can't do this unless he makes more money.

Unless he gets together with every other dealer in town, and establishes codes and fair price practices, he is not going to be able to do anything but gripe.

The manufacturer wants to see the small contractor stay in business and make money. He wants to see him have a nice showroom, and put out attrac-

tive advertising, and above all not only be able to sell his goods but to pay for them.

I can sum the entire situation up in this manner.

First, we are not organized and there are little if any restrictions placed on men going into our industry. They are not qualified technically or from an administrative standpoint.

Second, cure the first and put yourself in a profitable and healthy position and you then are ready to shout to those who are hurting you. If you can do the job the manufacturer is going to look to you, not cut-rate outlets, for he knows that the huge market represented by a cut-rate operator today may not be there tomorrow.

Better we all sit down and get busy cleaning up the disorganized industry which we retail contractors have created by being lethargic.

ARTHUR J. HUNT

Now Representing...

Waukesha Sales & Service, Inc. (Houston, Texas)—This firm announced that it has been named distributor for the "FloWay" turbine pump and "Watermaster" pump lines.

Astral Industries, Inc. (Englewood, N. J.)—Exclusive national distribution rights for the Astral refrigerator in both mobile home and LP-gas fields have been awarded NORCO SALES CORP., Los Angeles. **EMPIRE COOLER SERVICE, INC.**, Chicago, has been named distributor for the firm in that area for the portable refrigerators, and **CANADAY COOLER CO.**, New York City, has been named distributor for that area.

Recold Corp.—BOYD ENGINEERING CO., INC., El Paso, Texas, has been appointed distributor of air conditioning products in west Texas, New Mexico, and the state of Chihuahua, Mexico.

Fraser & Johnston Co. (San Francisco)—A new distributorship for heating and air conditioning

equipment has been established with the **SIDLES CO.**, Omaha, Neb. Territory includes Nebraska and the western two thirds of Iowa.

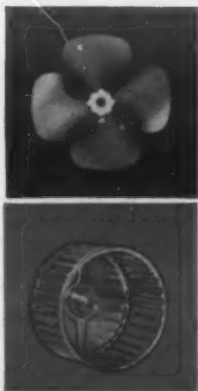
Gibson Refrigerator Co., Div. of Hupp Corp.—MEGOWEN & CO. has been named to represent Gibson as distributor in greater Detroit. Robert L. Megowen, president of the new firm, formerly was regional sales manager for Gibson.

Philco Corp.—GRAYBAR ELECTRIC CO. has been appointed distributor in Detroit, Lansing, and Grand Rapids, Mich.

Manitowic Equipment Works (Manitowoc, Wis.)—Appointment of three sales representatives for the company's new "2-Zone" built-in refrigerator-freezer combination has been announced. **J. VICTOR CLEMENT**, Atlanta, will cover Georgia and Florida; **JIM WRIGHT**, Dallas, will cover Texas and New Mexico; and **REX CONLEY, JR.**, Chattanooga, Tenn., will cover Arkansas, Louisiana, Mississippi, Alabama, and Tennessee.



ALPHA TO OMEGA



In the design, development and production of the three basic lines of air impellers—fans, blower wheels and complete blower units—Torrington technology is the finest available to industry.

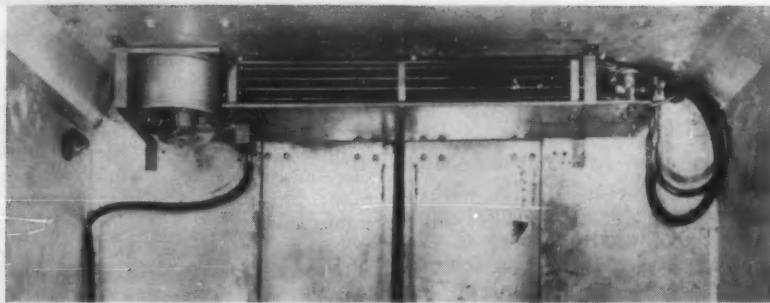
To date, more than half a million design variations of these three types of air impellers have been developed in the successful solution of industrial air moving problems.

No matter what your product or problem, if it involves the movement of air...talk to Torrington!

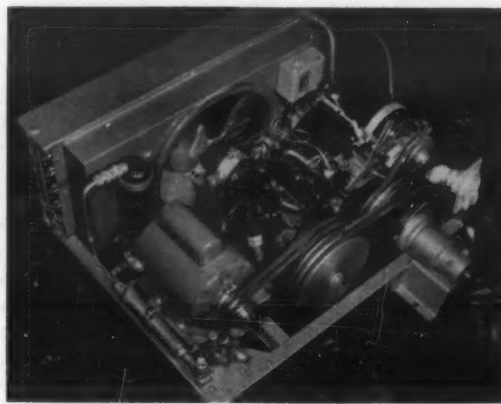
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For more information about products advertised on this page use Information Center, page 16.

No Loss In Payload Using Milk Truck Unit To Spread Cold Blanket



ONLY part of the Lance system mounted in the storage compartment is the blower-evaporator (weight, 25 lbs.). This ribbon blower was designed specifically for retail milk-truck service. Integrally mounted fan at upper left throws cold air over the load to fully envelop it in a blanket of protection.



HEART of the Kold-Hold Div., Tranter Mfg. Co. "Lance" continuous refrigeration equipment is the condenser assembly. Power is derived from an engine-crankcase pulley and is transmitted through a flexible drive shaft. Standby power is provided by a 3/4-hp., 110/220 v. single-phase motor.

LANSING, Mich.—A new "Lance" system of continuous refrigeration for retail milk trucks and a new two-fan blower for use in conjunction with its "Mark" and "Crown" continuous truck refrigeration systems was announced by the Kold-Hold Div., of Tranter Mfg., Inc.

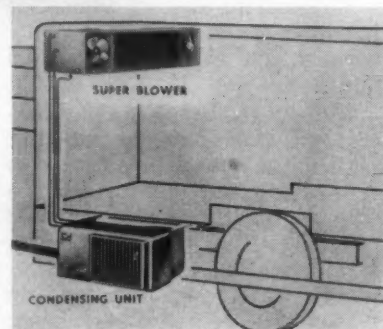
Outstanding feature of the Lance system, the company said, is that payload remains exactly the same as before installation of the equipment.

Weighing only 305 lbs. complete, the Lance system consists of three components: drive assembly, condenser assembly, and blower-evaporator.

Of these, only the 25-lb. blower-evaporator is located in the body itself. The other two are located at or near the chassis

gravity and to permit installation with no change in design.

The new "Ribbon Blower" has been designed specifically for retail milk-truck service. It measures 5 5/8 by 59 3/8 by 9 1/4 in., and is located at the top forward end of the body. Use of an integrally mounted fan results in cold air being thrown over the load to envelop it in a blanket of protection.

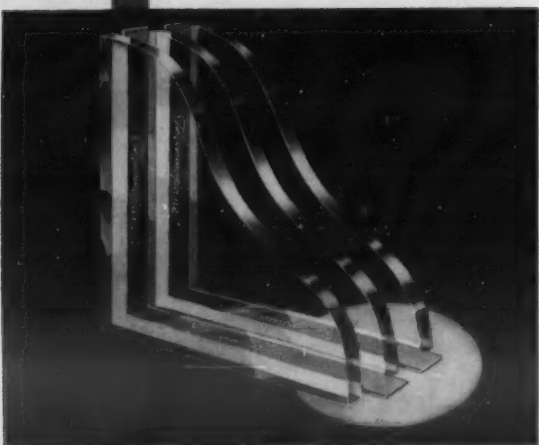


SUPER BLOWER, mounted at forward end of refrigerated truck features use of two fans canted at 19° angle to throw air along outside of body.

Keep your frozen food "in the clear" with THERMOPANE® INSULATING GLASS!



Customers see their favorite brands faster
(and from farther away)...
and this glass stays clear
for the life of the case!



ONLY THERMOPANE HAS A METAL-TO-GLASS SEAL
moisture and dirt can't penetrate!

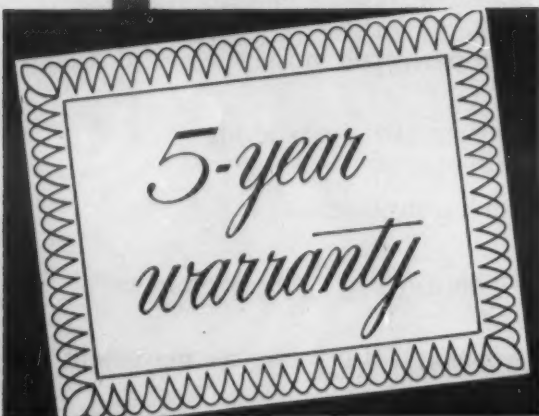
Only Thermopane insulating glass has the famous, patented *Bondermetic Seal*®. It's a metal-to-glass seal which prevents condensation between the panes of glass . . . keeps out moisture and dirt . . . and, there's NO ORGANIC SEALING MATERIAL TO DETERIORATE! Look for the name "Thermopane" between the panes.

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More than 7,000,000 units warranted to date.

Accept no substitutes.

For your own protection, insist on *Thermopane*.



Thermopane

INSULATING GLASS

LIBBEY • OWENS • FORD GLASS COMPANY

608 Madison Avenue, Toledo 3, Ohio



The power train consists of an engine-crankcase pulley, flexible drive shaft, and an electric clutch. Power from the truck engine drives the compressor in over-the-road operation.

A manual switch permits shut-off of the entire unit. The complete drive assembly has a weight of 60 lbs. Stand-by power is provided by a 3/4-hp, 110-220-volt, single-phase motor.

The condensing unit is installed in the driver compartment.

It requires no "beefing up" of the body structure for installation. Overall dimensions are: 13 1/2 by 28 1/2 by 25 in.

ADVANTAGES CITED

Advantages claimed for the Lance system include: Rapid recovery after door openings; dry, safe, milk storage over-night permitting pre-loading at any hour; no battery drain; quiet, 24 hr-operation; lower center of gravity for increased safety while in motion; and use of larger payloads.

The new "Super Blower" uses two, canted fans designed to provide a perimeter type flow of cold air through the milk truck body.

Pointing the fans at a scientifically determined angle to the main blower body is said to provide better circulation of air along the trucks outside walls to completely envelop the load from both sides.

It is also said to prevent undesirable recirculation of warmer air and to eliminate "blasting out" of cold air when the rear doors are opened.

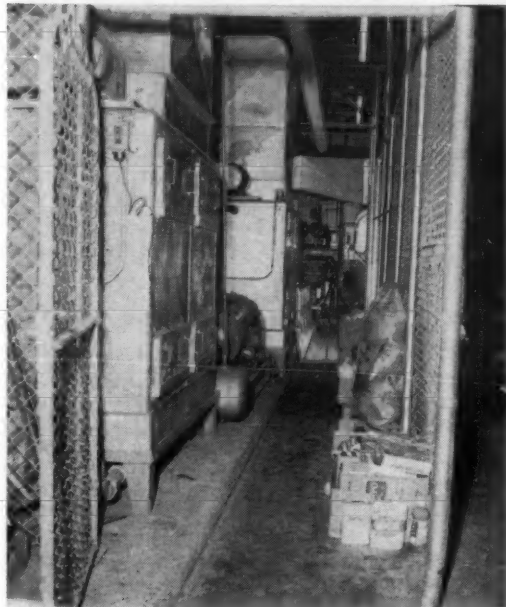
Especially designed to provide maximum low temperatures for frozen food operations, the Super Blower can also be used for medium and high temperature applications on milk and fresh-meat routes.

A variety of automatic controls are available including thermostatic control, hot gas defrost, and frost prevention systems.

Light in weight, and only 12 in. high, the blower occupies a minimum amount of payload space in the truck body.

Drive assembly and condenser are remote units located outside the payload space. Total width is 70 1/2 in., depth 15 5/8 in., and weight 93 lbs.

Devotes Extra Effort To Keep Store Workers from Being 'Own Worst Enemies' by Fencing In Conditioning Units



FENCING in the entire air conditioning job is a trademark of Denver contractor Chester Dennhardt, operator of Dennhardt Refrigeration Co. He insists supermarket employees are their own "worst enemies" in damaging air conditioning equipment. This installation was put in the King Soopers market in suburban Lakeside.

DENVER — Insisting that supermarket owners enclose all operating refrigeration equipment in the basement of new stores in a heavy steel mesh fence has been an unusual form of "goodwill insurance" for Chester Dennhardt, operator of Dennhardt Refrigeration Co.

Currently handling contracts for Denver's biggest supermarket chains and installing several jobs over the \$50,000 mark, Dennhardt has found that "supermarket employees are their own worst enemy" when it comes to carelessly damaging compressors, cooling towers, control panels, etc., located in the basement or rear stockroom.

WORKERS COVER UNIT

"No supermarket ever had enough space," Dennhardt commented. "Sooner or later heavy cases and cartons are stacked up on top of the refrigeration

unit, to the point that lines are broken, delicate adjustments thrown out of line, and food items spilled into belts, etc. Then, of course, when stacks of heavy cartons are built up around a compressor, circulation is shut off."

Consequently, when working out plans for new supermarket refrigeration, which usually include air conditioning, all self-service refrigerated cases, reach-in wall boxes, and storage coolers, Dennhardt devotes extra effort to this matter.

He advocates that the supermarket operator "fence the entire job" and include a gate which can be locked. Usually, the supermarket operator is against adding still more cost to an expensive refrigeration job, but, as Dennhardt puts it, "It takes only one bad experience to make them believers."

A typical such installation was made at the new 20,000-sq. ft. market of King Soopers, in suburban Lakeside. In this instance, 20 small compressors, a 40-ton compressor unit for the store air conditioning system, a 10-ton cooling system for the glass-enclosed meat department, three cooling towers, and associated equipment, were mounted on a concrete pier, 50 ft. long by 4 ft. wide, built along the left wall of the store's basement.

Two feet out from the edge of the concrete pier is a heavy

chain mesh steel fence (exactly like those used to enclose school yards, secure industrial plants, etc.) which is 60 ft. long, and with a padlocked gate.

ONLY BOSS HAS KEY

Only the manager and assistant manager carry keys to the gate, thus preventing store employees from using the refrigeration area for storage space.

"Even in this instance, the fence didn't bring complete protection," Dennhardt grinned. "Right away, store managers found that the fenced-in area was ideal for storing and protecting damaged food items which are tossed into cartons or baskets for return to the supplier."

"Often such foods, once they have been marked unfit for sale,

have a way of disappearing before they can be returned for credit. Consequently, the managers often lock up such items inside the steel fence, but since there is a relatively small amount, there has been less likelihood of damage."

Dennhardt, a very methodical operator, keeps statistics on each of his installations on a monthly basis and has been able to prove from actual maintenance cost records that his "fenced in" refrigeration equipment installations operate at lower cost.

Kroger Converts Toledo Ball Park to Shop Center

TOLEDO—Kroger Co. recently opened the largest store in its 1,500 store chain on the former site of the Swayne baseball park here.

About twice the size of the "average" supermarket, the store includes 44,000 sq. ft. and

provides parking space for 550 cars, according to J. B. Hall, Kroger president.

The store features, among other things, the chain's largest frozen food department, and meats and vegetables 100% packaged from rooms behind these departments. It is the first unit of the new Kroger owned Swayne Field Shopping Center.

All Johnstown A&P Units Now Have Self-Serve Meat

JOHNSTOWN, Pa.—All A&P supermarkets in the Johnstown area are now completely self-serve in the meat departments, a spokesman said.

The Wonder Street unit was the last to change over, with meats arranged across the entire width of the rear of the store. The enlarged dairy section features new-type refrigerated shelving. Cost of the improvement of this store is reported to approximate \$50,000.

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They'll
Do It
Every
Time
by
Jimmy
Hatlo



Wet-Heat-Type Furnace Manufacturers Strive To Revive in Air Conditioning

NOBODY gives up a lifelong business investment without a struggle. That's why dissidents to the theorem that year-round air conditioning is tied up inextricably with circulating-air systems are bestirring themselves. Not only are they baring fangs, teeth, and claws—they are exercising good sense.

The hot-water and steam-heat folk, who are awakening to protect their old-time stake in the home comfort business, are getting set to promote THEIR end of the industry in a strong manner.

As of today, 10 million of the 24 million centrally heated housing units in the United States are warmed by hot water or steam systems. While no figures are available for sales of summer cooling and air conditioning systems used in combination with hot water heating, substantial increases have occurred in the number of firms which market such equipment.

Installations of home heating equipment produced by the hot-water and steam-heating industry achieved an all-time record in 1955, but veered off in 1956. That's one reason why the "wet heat" folk are concerned.

Three years ago only seven hot-water heating manufacturers offered "add-on" air conditioning equipment. This year at least 10 such have entered the summer comfort field formally. These "wet heat" people are merchandising four different types of newly developed home cooling systems, to wit:

- (1) Room convector type units, which cool as well as heat, and use the same piping system for chilled and hot water.
- (2) Baseboard type units which cool and heat, also using the same piping.
- (3) Convectors which cool only—operating on a piping system separate from hot water or steam lines.
- (4) Centralized refrigeration units installed separately from the heating system.

Intolerance, and racial and religious discrimination, are not the by-products of any particular kind of working condition, wage-classification, or economic group. They are germs which do their damage in every type of human being, and they are just as contagious and indiscriminate as chicken-pox, while having a mortality factor more closely resembling that of cancer and tuberculosis.—CHARLES E. WILSON.

While all four types are designed for installation in new residences, types three and four are particularly adaptable for modernizing older homes—a tremendous market in itself.

Development of the market for summer cooling in both new and old homes is a major target of the Boiler and Radiator Manufacturers Institute's sales promotion program. Such activities as its I-B-R Technical training program, which includes the publication of installation guides, and the sponsoring of university short courses for heat-cooling installers, are excellent. Cooperation by the I-B-R with the University of Illinois—to develop improved cooling and air conditioning methods for utilization with hot water and steam systems—is paying off, too.

The Institute of Boiler & Radiator Manufacturers proposed recently that a new name, "hydronics," be adopted by the industry. Introduced by Edward F. Ford, chairman of an I-B-R committee "hydronics" was described as a word which more clearly identifies the multitude of uses of controlled water for heating and cooling.

Definition of this coined word (by the committee) is: "Hydronics (hi dron icks), noun: That science relating to hydraulic-electrical combinations, especially with reference to forced circulation of liquids for comfort heating, compatible cooling, zone temperature control, snow melting, and faucet water heating. Hydronic (adjective), Hydronically (adverb)."

Second major aim of the I-B-R program is training and encouraging contractors to install hot water heating and chilled water-cooling systems in homes more efficiently and at lower cost.

No doubt this is the most important task the I-B-R faces. Let's hope and trust it will cooperate further with ARI toward the goal of more business for everyone in the burgeoning air conditioning industry.

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AIR CONDITIONING & REFRIGERATION NEWS

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VOLUME 81, No. 9, SERIAL No. 1,475, JULY 1, 1957

"A newspaper conducted on the true and natural principles of such a publication ought to be the register of the times, and faithful recorder of every species of intelligence. It ought not to be engrossed by any particular object, but, like a well-covered table, it should contain something suited to every palate."—John Walker.



IT'S 'ELECTRIC COMFORT HEATING' IN KANSAS

Kansas Gas and Electric Co.
Wichita, Kan.

Editor:

Normally I don't read your editorials, but in your June 3, 1957 issue, I was compelled to do so by your very appealing heading of "Space Heating by Electricity is Incubating Encouragingly."

The article was well written and I concur with your thinking concerning the term, "resistance heating." The term itself rules out any conversation about the Heat Pump, plus the fact it could be a psychological handicap.

Out here in Kansas, we prefer to call it "Electric Comfort

Heating," because it is more than just a matter of heating space.

In the future, I shall pay more attention to your editorials.

KEN LARUE

TO MAKE DEALER MAILING OF PRICE CUT EDITORIAL

Dowagiac Steel Furnace Co.
Dowagiac, Mich.

Editor:

We would like to ask your permission to reprint the article which appeared in your June 10 issue which was entitled "Price Cuts Are Root Of Industry Troubles," the editorial by George F. Taubeneck. We would like to print up this article and mail it to our dealers.

F. N. PARKER

Handy Way to Subscribe

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Canadian Refrigeration, Air Conditioning Class Graduates 7 Apprentices



TORONTO, Ont., Can. — The first class of refrigeration and air conditioning apprentices was recently graduated from the Provincial Institute of Trades here, it was announced by the Canadian Refrigeration Manufacturers Association, sponsors of the class.

FIRST OF ITS KIND IN CANADA

The seven-man graduation class and the instructor were guests of the CRMA at its regular quarterly banquet held at the King Edward hotel prior to a graduation ceremony. According to the association, this is the first school of its kind ever to be conducted in Canada.

The ten-month course is designed to prepare the student for a position in the industry as an apprentice mechanic.

COURSE COVERS PRINCIPLES

It covers principles of installation, operation, and maintenance of industrial and domestic equipment, including psychrometrics, refrigeration and refrigerating loads, compressors, condensers, evaporators, motors, humidifiers, ice machines, controls, duct design, and piping.

Other subjects, such as English, mathematics, physics, chemistry, and mechanical drawing, are covered as they apply to the theory of the course.

The course is open to young men over 16 who can pass the entrance examination of the institute.

Information about this course is available by writing to The Registrar; Provincial Institute of Trades, 21 Nassau St., Toronto, Ont., Can.

GRADUATES of first refrigeration and air conditioning apprentices class at Provincial Institute of Trades in Toronto, Ont., Can. are shown with their instructor and the president of the Canadian Refrigeration Mfrs. Assn.: (l. to r.) Morris Weis, John Diujak, Charles Cowen, Jerry O'Donovan, John Ueberer, Instructor, Bill Podd, Jr., Bob Gratton, Tom Weis, Edward Milner, President CRMA.

Copper Tube Tips: Temper, Expansion-Contraction, Application Bending, Fittings

DETROIT—As an aid to contractors, servicemen, and others who work with copper water and drainage tube, engineers from Calumet & Hecla's Wolverine Tube Div. offer the following job tips:

1. **Application** — Generally, Type K tubing is used for underground installations. Its heavy wall makes it especially adaptable for this use. Type L is used mostly for interior and general plumbing installations. Type M tubing is recommended for stack waste and vent lines or other non-pressure applications of tubing.

2. **Temper** — Hard temper tubes are usually recommended where appearance is important and where sagging is detrimental. For instance, where a definite pitch is necessary to eliminate

freezing or vapor locks, sagging would destroy the required pitch allowance.

Because they are readily bent, soft temper tubes are used when tube must be worked around obstructions or between walls. It is more resistant to bursting, caused by freezing of water inside, than hard tubing. However, support is required to avoid objectionable sagging, as is provided in the case of ground lines.

3. **Expansion-Contraction** — A hundred feet of copper water tube, subjected to 100° F. temperature change will expand or contract approximately 1 1/4 in. in length. Therefore, allowance must be made for expansion and contraction when lines are installed.

4. **Bending** — Bending is more

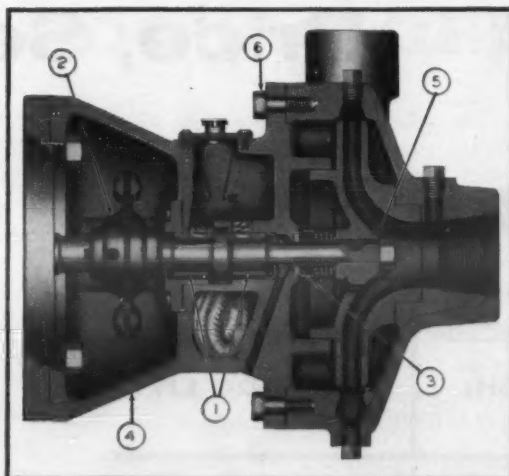
economical than using fittings—and this should be taken advantage of where possible. Soft copper tubes should be bent gradually—never abruptly. They should never be bent over sharp edges—or else kinks may result which will restrict flow through it.

5. **Tube Fittings** — Flare type and solder type fittings are both obtainable for use with copper tubing. Flare fittings are well adapted for use with soft tubing; solder type with hard tubing. Soft or silver solders can be used. In either case it is imperative that the surfaces of the tube and fittings are clean and that they are heated properly to assure a free flow of solder and to permit the entire surface of the joint to be filled with the solder.



REALLY Quiet!

...your answer to noise problems in cooling tower installations



In the B&G Series 1522 Pump, noise has been engineered out... together with usual causes of unsatisfactory performance.

The cut-away illustration at left tells the story—

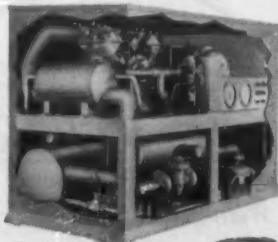
1. Long bronze sleeve bearings in both the pump and motor assure quiet operation.
2. Spring-type flexible coupling makes a noise-dampening connection between pump and motor.
3. "Remite" Mechanical Seal positively ends leakage. Harder than glass—wearproof—self-lubricating.
4. Bearing bracket sub-assembly, including shaft and sleeve bearing, is easily removed and is interchangeable in all B&G 1522 Pumps.
5. Dynamic balancing of the impeller prevents shaft vibration and seal failure. Balancing chamber and relief holes eliminate thrust load on pump bearings.
6. Easily serviced. Removal of a few bolts permits separation into three parts.

B&G Series 1522 Pumps are available as all-iron, bronze-fitted, all-bronze or stainless steel units. Capacities to 150 GPM, heads to 115 ft. Send for catalog.

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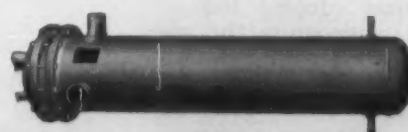
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Cooling Coil Icing Cited as Problem In Dehumidification

**One Solution: Below 65° Set Back-Pressure Regulator Valve at 32°;
5 Characteristics of Adsorbent's Practicability Offered**

CHICAGO — Advantages of various types of dehumidification equipment and their uses were explained in a symposium on dehumidification held during the annual convention of the American Society of Heating & Air-Conditioning Engineers here recently.

Under the direction of moderator John Everetts, Jr., W. E. Ellis, president of Ellis & Watts Products, Inc., outlined the uses, components, advantages, and disadvantages of mechanical refrigeration type dehumidifiers.

Walter L. Ross, manager of the development laboratory of National-U. S. Radiator Corp., gave some typical operating characteristics of solid adsorbent dehumidification machines.

E. W. Gifford of Milwaukee listed desirable characteristics of liquid sorbents. G. W. Higgs, Jr., assistant manager of supply, Marine Corps, and Naval research branch, construction division, Bureau of Yards and Docks, described the economics of dehumidified storage.

Prof. E. R. Queer, director of engineering research at Pennsylvania State university, pointed up some typical dehumidification problems and their solution.

Lowering Temperature Increases Humidity

Ellis, in his paper on "Dehumidification by Refrigeration," brought out the fact that although a mechanical refrigeration system can be considered a dehumidifier, lowering the temperature tends to increase the relative humidity. For this reason, he pointed out, dehumidification equipment should be designed specifically for the purpose.

The entire unit should be placed in the area to be dehumidified. The condenser coil should be down-wind from the cooling coil. Condensate can be collected in a closed container or drained away. Ellis warned that the condensate drain should be trapped to prevent the unit from picking up humidity from open water.

Icing of the cooling coil was cited as a problem in a space where the temperature is likely to drop below 65° F. One solution to the icing problem, Ellis said, is to install a back-pressure regulator valve. This valve will maintain the pressure and consequently, the temperature within the evaporator coil. If the back-pressure valve is set for 32° F., the coil will not ice.

'Process Dehumidification Fills Industrial Need'

Process dehumidification, Ellis stated, fills an industrial need not generally known. The sales engineer must educate the industrialist to recognize the importance of controlled dehumidification.

Mechanical refrigeration equipment used in conjunction with adsorption units greatly lessens the load on these units when high temperature, high dewpoint air is entering the system, and low dewpoint leaving air is required.

Ellis voiced the opinion that mechanical refrigeration can solve many dehumidification

problems, particularly when entering air is above 80° F. and humidity is above 50%. The problem becomes more difficult as entering air temperatures vary downward, with 65° F. entering air as the minimum temperature at which mechanical refrigeration can form an effective dehumidifier.

To graphically illustrate the effectiveness of solid adsorbents, W. L. Ross brought out that an adsorbent, like a sponge, has a tremendous surface-to-volume ratio, and the vapor pressure of air is much greater than that of the adsorbent, causing flow of vapor from air to desiccant.

One cubic inch of silica gel, he stated, contains a surface area of 90,000 sq. ft. A tablespoon of silica gel has a surface

area greater than a football field. Its surface capillary adsorption is tremendous.

Defines Surface Capillary Adsorption

Surface capillary adsorption was defined as the ability of a substance to attract vapor, condense it, and hold it. When saturated, silica gel can be reactivated by heating; boiling off the condensed vapor by raising its pressure to a point where it exceeds the counteracting forces holding it to the adsorbent.

Dynamic dehumidification, he explained, is done by forcing air over a desiccant. Static humidification is accomplished by placing a desiccant in a static air space, usually in a bag or other container.

As an example of dynamic dehumidification, he presented a slide showing a schematic of a dual-bed dehumidifying machine. While unconditioned air is being forced over one bed, he explained, the other bed is being reactivated by preheated air circulated over it. Circulation of air over the two beds is alternated at regular intervals so that one bed is always dehumidifying while the other is being reactivated.

Any solid, Ross explained, will remove moisture from air, but a number of characteristics will determine the practicability of an adsorbent:

1. Reactivation characteristics.
2. Crushing strength.
3. Equilibrium capacity.
4. Cost.
5. Ability to stay in place.

Ross also pointed out these advantages of solid adsorbents:

1. High dewpoint depression.
2. High drying efficiency.
3. Non-corrosive.

4. Easily handled.
5. Easily reactivated.

Characteristics of Good Liquid Sorbent

Liquid sorbents were discussed by E. W. Gifford. Among the necessary characteristics of a good liquid sorbent, he listed the following:

1. Non-crystallizing.
2. Non-corrosive.
3. Odorless.
4. Non-vaporizing.
5. Non-toxic.
6. Non-flammable.

There are two solutions in use today as effective sorbents, he stated—aqueous solution of lithium chloride and tri-ethylene glycol.

Gifford accentuated the special advantages of the liquid sorbents in handling large quantities of air; its flexibility and ability to vary its performance over a wide range. Sterile atmosphere created by dehumidification.

(Concluded on next page)

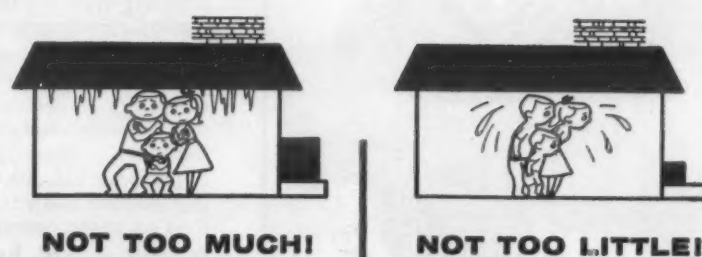
BUDGET 301
*19,000 to 23,000 BTU/Hr.

SUPER 352
23,500 to 32,000 BTU/Hr.

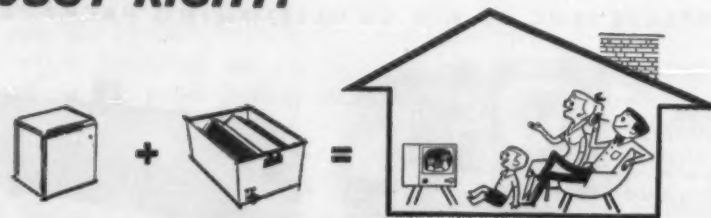
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Maximum comfort throughout the house—24 hours a day. Mastery of both heat and humidity that only "Just Right" air conditioning can give.

YOU CAN BE SURE...IF IT'S

Dehumidified Storage 'Cuts Costs'--

(Concluded from preceding page) fication with liquid sorbents lends itself to pharmaceutical applications and will definitely increase their use in comfort air conditioning.

George Higgs' work and experience have provided him with a wide knowledge of dehumidification of war materiel, ranging from dehumidification of the reserve fleet to designing and building large warehouses for dehumidified storage.

Higgs effectively pointed up the huge reduction in storage costs affected by dehumidified storage. In addition to the greatly improved preservation factor of dehumidified storage, the incidental costs such as fewer periodic inspections and elimination of necessity for disassembly and re-application of protective coatings on rust or corrosion-prone materials are greatly reduced. Higgs esti-

mated that preservation expenditures are reduced approximately 50% when dehumidified storage is utilized.

Shows Low Cost

Higgs showed that the costs of dehumidification are low, about 40 cents per gross sq. ft., initially, and 2 to 5 cents per gross sq. ft. annually. "Gross sq. ft." was defined as the area the item occupies in the warehouse, plus the clearance allowance for access aisles.

E. R. Queer discussed at length the problems of dehumidification and the methods employed in their solution. He cited the necessity of removing all moisture from such substances as industrial gases, pharmaceutical products, etc.

Low humidity atmosphere, as a means of providing long-term preservation of materials, Queer stated, is not a new develop-

ment. The Egyptians' burial places were located in arid lands where humidity seldom rose above 15%, relative. Through the centuries embalmed bodies and materials were maintained in excellent state of preservation. When these bodies and materials were exposed to normal atmosphere the deteriorating effect of humid atmosphere quickly became apparent.

Queer described the experiences of the U. S. Navy in preserving ships and warehouse-stored materiel at the close of WW-II.

'Dynamic Dehumidifiers'

Dynamic dehumidifiers, circulating air over desiccant beds, proved the more economical for large areas, he said, but small compartments, where space was not available for the equipment, were effectively dehumidified by the static method; desiccant contained in bags, placed in a sealed enclosure.

The maximum allowable hu-

midity, it was determined, should not exceed 30% in the interior of the ships. At this level, the ships were free of vermin due to complete absence of water for them to subsist on.

The dehumidification loads of a ship, it was brought out, are made up of the surface adsorption load, and breathing load from personnel that may enter the ship for inspection. No part of an inactive ship is inhabited, he said. A dual bed solid desiccant machine having a 7½-lb. per hour water removal rate at 70° F. and 35% relative humidity is sufficient to handle 300,000 cu. ft. of ship volume.

For the first 10 to 12 weeks, the dynamic dehumidifier will operate almost continuously to remove the moisture adsorbed in the painted surfaces, organic materials, and such residual water that is not entirely drained or swabbed up.

The residual load is much bigger than usually anticipated, he pointed out. For example,

for a 10,000-ton cruiser, it was estimated that 10,000 lbs. of water was removed during this period. After the initial drying the machine ran an average of 35% of the time, usually at night.

Queer explained the control and recording system, which consists of eight sensing stations having both a humidity and dry-bulb element, distributed throughout the zone being dehumidified.

Needs for Warehouse Dehumidification

The humidity requirements for warehouse dehumidification, he said, was not as stringent as that for metal enclosures, as the heat capacity of the warehouse structure is greater, but the greater difficulty of closure is a problem to reckon with.

Queer brought out the need for extreme dryness in natural gas that is stored and transmitted under ground or in pipe lines, to prevent possible freezing of condensed moisture in valves, especially in winter when the gas is needed most. Other gases such as propane, bottled oxygen, hydrogen, and acetylene must also be free of moisture.

Refineries, it was noted, are operated on pneumatic controls that are sometimes exposed to temperatures as low as -20° F. The dewpoint value of the air passing through these must be well below -20° F.

In a question directed to Ellis from the floor, opinion was expressed that refrigeration-type dehumidifiers occupy too much space to be practical.

Sees No Extra Space Needed

Ellis stated that the refrigeration-type units don't require any more space than other types, in sizes of more than 1,000 cu. ft.

Another speaker from the floor discussed ships as a big field for dehumidification; mainly, tankers and steel carriers. It was mentioned that in a tanker costing \$10 million, a \$100,000 dehumidifying system is a good investment. The speaker also cited an instance in which dehumidifying equipment is used to prevent corrosion of cargoes of steel in transit from east to west coast.

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PROFIT WITH FULL MARK-UP! Westinghouse gives you the only really new line for 1957... packed with power, performance and price advantages. Unlike competitors who must bid a 5 HP price on many 3½ HP jobs, or hope that an underpowered unit won't bring complaints, you get the one unit that is "Just Right" for the needs of your customer. There's no more *making do* with old-fashioned 2, 3 and 5 HP units. Best of all, there are both Budget and Super models that make it possible for you to profit with "Just Right" cooling capacity at the "Just Right" price.

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doors. Handsome beige-and-charcoal cabinets are completely insulated... moving parts are located outside the house... exhaust air up and away from exterior walls for *whisper quiet* operation... protect components from moisture. What's more, these new cooling units will combine with any forced warm air heating system to give your customers automatic year-round air conditioning.

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- "Whisper Quiet" Operation
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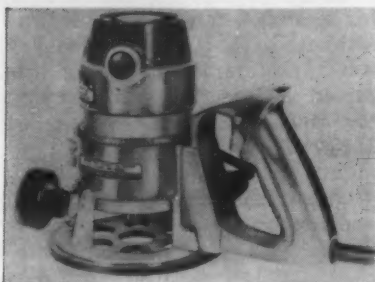
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Portable Router Has Finger-Tip Control

KEY NO. G-710
SYRACUSE, N. Y.—A completely new router has been added to the Porter-Cable line of industrial tools. The model 150 router features finger-tip power control, light weight ease of operation, and a power unit designed to be interchangeable with a planing attachment and shaper table. Handle allows greater control of the router in any position, assuring operational safety and accuracy.

Over 150 bits and cutters can be

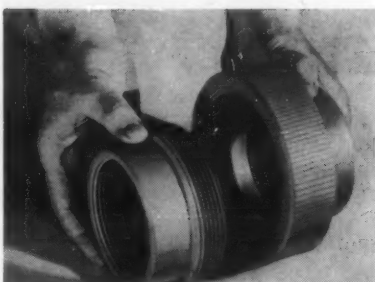
used to achieve such effects as veining, fluting, compound molding, reeding, bevelling, or V-grooving.

Templets are available to perform jobs ranging from dovetailing to hinge seating, the manufacturer added.

Improves Glass Cleaning Tool

KEY NO. G-711
BURLINGTON, Mass.—Jerguson Gage & Valve Co. has announced an improved design "Gage Glass Cleaning Tool" which uses brushes to quickly clean the inside of liquid level gauge glasses.

The cleaning tool consists of a stainless steel rod with a bronze T handle, operating inside a stainless steel tube. Wiping mechanism consists of two commercially available brushes which screw into a holding plate. These brushes increase the life of the unit and allow effective cleaning to the very ends of the visible glass of the gauge, it was said.



3-In. Screw Pipe Union Offered

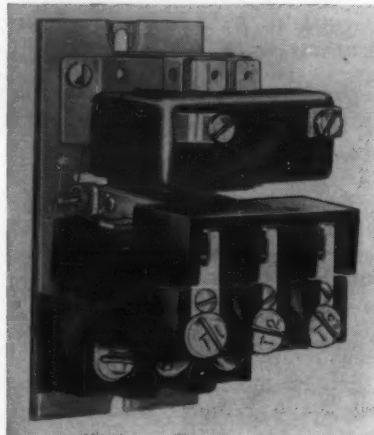
KEY NO. G-712
NEW YORK CITY—A plastic 3-in. screw pipe union has been introduced here by the Walworth Co. Made of corrosion-resistant rigid polyvinyl chloride, the large union is claimed to up PVC piping applications.

Specially designed surfaces in the joints of the three-part union provide a tight seal against flow leakage. Material is resistant to salts, alkalis, and acids at 150° F.

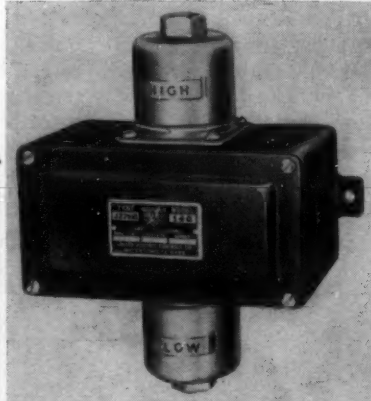
Develops 20 Amp. Magnetic Relay Series

KEY NO. G-713
HARTFORD, Conn.—Arrow-Hart & Hegeman Electric Co. recently developed a new 20 amp. two, three, and four-pole magnetic relay suitable for all types of fractional and small integral horsepower motors.

Unit can be used with 80% of all residential central air conditioning equipment, the company pointed out, with such auxiliaries as fans and damper motors added. Designed with special silver cadmium oxide contacts, it is claimed this relay will require no service after installation. It is available in all standard voltages, measures 4 by 2 7/16 in.



Adds Dual Switch Differential Control



KEY NO. G-714
WATERTOWN, Mass.—One of the latest controls to be added to United Electric Controls Co.'s

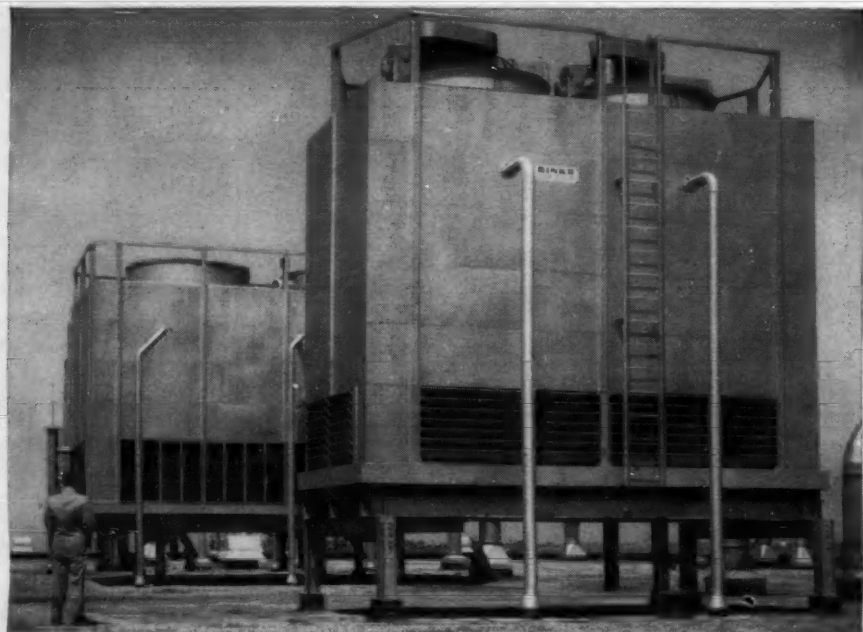
catalog of standard controls is type J27KB, a dual switch differential pressure control. This control unit makes it possible to control accurately the difference in pressure between two pressure or vacuum sources, the company announced.

Each switch has a separate adjustment screw that is uncalibrated. The switches become actuated when the pressure on the "high" side exceeds the pressure on the "low" side by preset amounts, regardless of the static pressure value. Switches may be set together to simulate double-pole circuitry or set apart to obtain independent operation. Wider limits of differential between switches are obtainable, it was added.

Solder Designed To Resist Corrosion

KEY NO. G-715
PHILADELPHIA—"Farco All Metal Solder" is a newly-improved solder designed to resist corrosion and introduced here by Farrelloy Co.

It has an affinity for all metals including aluminum and has a melting point only 27° higher than 50-50, the company claims. It withstands 20% salt spray bath for 800 hours without deteriorating, it was noted. Soft enough to work with machinist scraper, it acts as an electrolytic buffer between dissimilar metals, the company said.



At the new Caterpillar Tractor plant in Decatur, Illinois, four Binks 2-K Series cooling towers play important roles in the manufacturing processes.

at Caterpillar's Decatur plant Binks towers keep heat treating under cool control

The tough muscles of steel that make "Cat" motor graders and wheel tractors dependable work horses are no accident. All vital parts go through scientifically controlled heat treat processes.

Binks cooling towers play an important part in this process by controlling the temperature of quenching oils and water. They are also used to cool water that circulates to cool bearings in the electric induction heat treat furnaces.

Failure of the cooling equipment could be costly.

Dependability you can count on
Binks cooling towers are built to rigid specifications. All panels and framework are heavily galvanized and coated for long life and minimum maintenance. Fans are corrosion-resistant aluminum alloy.

Scientifically balanced air-to-water ratios give high cooling efficiency under all climatic conditions.

A complete line
Whether it is for cooling process fluids or for use with air conditioning compressors, there's a Binks cooling tower, of the correct capacity and type for every job.

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Ask your Binks branch office for a copy of Bulletin 333 and Bulletin 477-A or write direct to the address below. Binks engineers will be glad to answer your questions and help you solve your cooling problems. There's no obligation.



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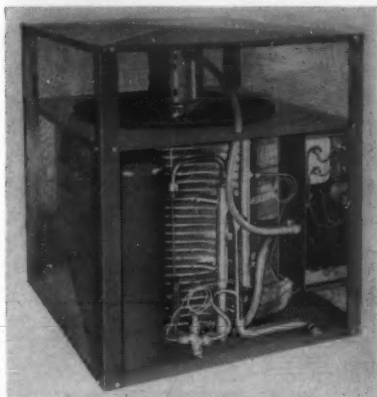
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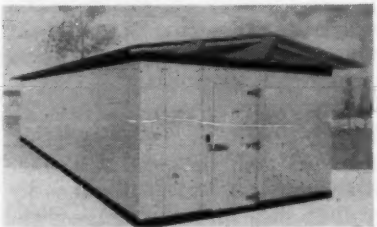


Unit Has Circular Coil Condenser

—KEY NO. G-716—

MIAMI, Okla. — Circular coil condenser with "more than 12½ sq. ft. prime coil surface" with low amperage draw is the highlight of "Miami-Air" residential and commercial air conditioners recently developed here by Miami Products, Inc.

Miami-Air will not shut off from high head pressure at any temperature under 130° F., the company claims. A blade-type fan is used in the condenser due to lack of static resistance on the one-row coil, it was added.



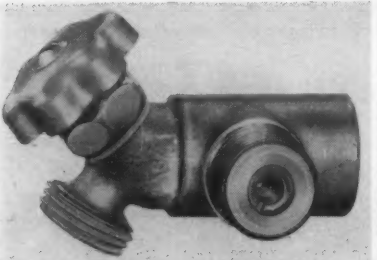
Walk-In Unit's Coil Bans Mixed Odors

—KEY NO. G-717—

CINCINNATI — C. Schmidt Co. recently announced a new "Space Saver" line of sectional, steel walk-in coolers and freezers, with "life-time" construction.

The coolers feature patented "Filter-Flo" coil which eliminates mixed odors, retards the growth of bacteria, and maintains a high humidity, the company noted.

Freezers feature thick insulation, special air-tight section joints, and low-cost operation. This equipment will operate efficiently out-of-doors as well as in a building. Special finishes for the metal and heat reflective outside surface make it practical to erect them out-of-doors, the company said.



Adds Flow Control Tee to Heater

—KEY NO. G-718—

KALAMAZOO, Mich. — Ruud Mfg. Co. recently added a flow controlling tee to its standard "Sanimaster" gas water heater.

This device is said to eliminate cold water turbulence in the tank and makes unnecessary a check valve in the return line, the firm said. It is a special drain cock with an additional side opening. This orifice controls volume and speed of water returning to the Sanimaster when connected to flow and return lines of commercial utensil, glass, and silver washers.

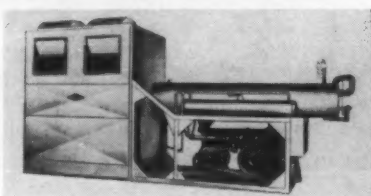
Markets Packaged Water Chiller Line

—KEY NO. G-719—

LOS ANGELES — Drayer-Hanson's expansion into the packaged equipment field continues with announcement of introduction and marketing of a line of packaged water chillers, complete with built-in evaporative condensers.

Product is designed for industrial and commercial applications, to be matched with individual room fan-coil-filter air conditioning units as source of central water supply.

Designated CWG-E, the new line consists of 7½ hp. to 75 hp. packaged water chiller models, with



attached evaporative condensers, eight in all.

All units are complete with insulated heat exchanger and chiller; insulated suction lines, suction and discharge line vibration absorbers; across-the-line starters; and oil pressure differential switch.

Refrigerator Has All-Plastic Interior

—KEY NO. G-7110—

BOGNOR REGIS, England — Lec Refrigeration, Ltd. here recently introduced a new 6-cu. ft. "deluxe" refrigerator with an all plastic interior. It is finished in translucent pastel blue exterior.

Adjustable shelves, full-width freezer compartment, large "Dew-bin," and door storage racks are

features of the 44 by 23½ by 25½-in. unit. It has shelf area of 10.7 sq. ft. Frozen storage is 845 cu. ft.

Dubbed the "International," the refrigerator has nylon hinge bearings for easy door movement, automatic interior lighting, thermostat control, and "Vertimetic" compressor.

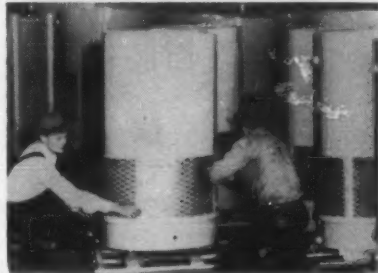
Jet Sprays Force Air Through Cooling Tower

—KEY NO. G-7111—

WICHITA, Kan. — Recently introduced by Koch Engineering Co. here was a "Jet Action" cooling tower which uses jet action to force air through the tower, eliminating fans, electric motors, belts, pulleys, and bearings.

Air movement and cooling are supplied by a system of water-jet nozzles at the tower's top. They spray downward and move a large volume of air through the tower, it was explained. The spray nozzles atomize the water into minute particles, causing air and water mixing, eliminating wood slats and baffles.

Plastic and plastic-coated con-



struction is said to keep at a minimum the accumulation of water chemicals, or the growth of algae. Of columnar design, the Jet Action tower has dove gray plastic finish. It is available in sizes for residential and commercial use.

Liquid Solvents Cleanse, Inhibit Acid

—KEY NO. G-7112—

TENAFLY, N. J. — The development of a liquid combination of solvents, safely inhibited acid, and detergents for cleaning and brightening of aluminum is claimed by the Penetone Co.

Called "Lumabrite," this product

is designed to brighten and clean aluminum trucks, trailers, aluminum aircraft "skins," aluminum window frames, aluminum, stainless steel, and enameled railroad cars. It is also recommended on all stainless steel, copper, enameled, and lacquered surfaces.

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the fabulous new

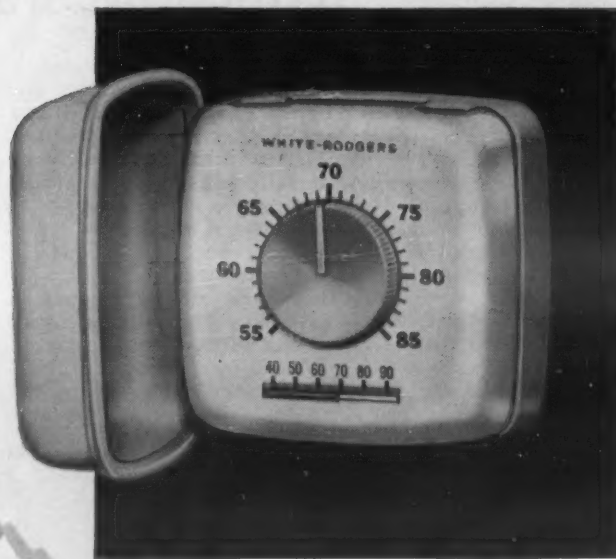
Fashion **PUSH BUTTON**
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PushButton, year-'round temperature control is now combined with the powerful, sales-motivating styling of the Fashion. Sub-bases to fit any heating-cooling system ... backed by the name that's famous for quality controls ... White-Rodgers!

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TORONTO 9, CANADA

What's Going On in HEATING

News of Methods, Products, People

Does Contractor Progress Match Equipment?

Fervent Plea: 'Bring Genuine Comfort to Homes' Features Confab as Dealers, Contractors Hear How To Figure Costs, New Heating Ideas, Consumer Attitudes

SAN FRANCISCO — Suggestions on how dealer-contractors can meet current operating problems and comments on industry developments and difficulties were offered during three panel discussions and a dozen talks at the successful summer convention here of the National Warm Air Heating & Air Conditioning Association.

Registration totaled 421 for the event, which covered such subjects as costs; mutual problems of builders and contractors; perimeter heating and air conditioning; the wholesaler's place in the industry; consumer attitudes toward air conditioning; air conditioning sales, engineering, installation, controls, and service; and promotion and merchandising.

Panels Enliven Meeting

Besides national experts, the program was enlivened by panels lined up by the three co-operating Pacific Coast groups:

the Institute of Heating & Air Conditioning Industries of Southern California, Warm Air Heating Institute of Northern California, and Portland (Ore.) Warm Air Heating & Air Conditioning Association.

With all the fervor of Paul Revere on his midnight ride, the irrepressible C. W. Nessell "laid it down" to the industry, naming those present as candidates for a sacred oath to bring genuine comfort into the homes of America.

Chairman of the NWAHACA field investigation committee and heating industry consultant, Minneapolis-Honeywell Regulator Co., this missionary of uniform air temperatures advocated the 100% satisfactory job as worth the cost, and the only way to assure warm floors, no drafts, and healthy conditions.

Nessell spoke on "The Unexploited Market" for good installations. Any other kind is a dead albatross around the neck

of every man jack in the industry, he said.

Gives Final Report

The final report, just completed on Nessell's "residential zone control survey" was handed to those in attendance at the convention. In his talk Nessell said the survey showed that in San Francisco 27% of single family homes costing over \$10,000 require two or more thermostats to maintain uniform comfort.

The vast majority of these are houses costing over \$30,000, and of this group 30% need two thermostats because of large glass areas, 25% because of spread out floor plans. Basement occupancy also is an important factor.

'Do You Know Your Costs?'

M. E. Sale of Sacramento, general credit manager for Slakey Brothers, Inc., spoke on "Costs! Do You Know Yours?" He stressed the necessity of financial statements at regular and frequent intervals, danger signs on balance sheets, how to insure a reasonable profit level, what is done with profit besides paying taxes, and how to properly age accounts receivable.

Three building contractors and three heating and air conditioning contractors made up a panel on mutual problems, with Roland R. Taylor, application engineer for Fraser & Johnston Co., as moderator.

Taylor pointed out "the general contractor and heating contractor form a team for the function of satisfying the consumer. Only if that function is accomplished does each remain in business and make a profit."

Starting the panel discussion, A. B. Briggs of Portland, manager of Iron Fireman Mfg. Co.'s

Portland sales and service division, said "there have been far too many heating installations that have been performed in the name of a warm air heating installation."

"They should be more rightly called anything else under the sun but a warm air installation."

"Something should be done about it and done soon if we in the warm air heating industry are to survive. Is it because we are afraid to ask a price befitting a good installation?"

'Too Lazy To Sell?'

"Maybe we are just a little too lazy to sell, to point out all the benefits from a good installation."

"It is good to know and a real pleasure to deal with a builder of integrity, who wants to produce a home of which he will be proud, and for which the new owner will sing his praises. I feel it is up to each one of us first to look to ourselves."

Duke R. Newby, general contractor of Portland, said "in the housing of tomorrow, I think the heating of the future will see a great change, heated not by a central system, but with each room with its own small compact plant, silent in operation and thermostatically controlled to maintain even temperatures in all seasons."

Sees Installer In Pot-Bellied Stove Era

Harold Boothby of Boothby Sheet Metal, Sacramento, stated that "manufacturers are furnishing equipment far surpassing the forward look of the automobile, but the installer is still back in the pot-bellied stove age. Education of the installer is one of the biggest problems facing the industry."

Boothby pointed to the adapt-

ability of electric panels large enough to be added onto in event of later additions to heating or air conditioning systems.

He said restrictive size and improper placement of equipment rooms is a problem that should be corrected.

Too often, he said, there is improper planning for outside air-cooled condensing equipment, and other types such as cooling towers or evaporative condensers. Sometimes not sufficient clearance is provided between houses for these outside units, causing undesirable noise conditions, Boothby said.

'Need More Salesmanship'

A. F. Oddstad, Redwood City builder, said "the industry needs more salesmanship. We must revise our sights and draw a bead on the potential home buyer. Lack of knowledge about warm air heating is pathetic, and lack of real understanding about it is even worse."

D. S. Will of Southland Heating & Air Conditioning, Inc., Long Beach, declared: "I have seen some of the crummiest installations, and we helped the general contractor do that to us."

"Let's get away from the nuts and bolts and sell the whole in-

(Continued on next page)

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**LOW
VOLTAGE**

Can Be Corrected

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**Acme Electric
Buck and Boost
Transformers**

Too frequently, air conditioning installations do not function properly; motors do not come up to speed, have no torque and windings burn out. This trouble can be traced to low-voltage. And, when motors run hot, insulation chars, windings burn out — look for a condition of excessive voltage. Distribution of power, complicated by inadequate wiring, circuit voltage drop and improper transformer ratios, often result in inadequate voltage supply or excessive voltage at the point of use. Plants and commercial buildings with well engineered wiring systems, report circuit voltages as low as 88 volts, and as high as 152 volts from which 115/120 volt single phase window air conditioners are intended to operate. No wonder so many service calls — so many motor failures. Check your voltage first, then correct to normal with an Acme Electric Buck and Boost transformer.

CORRECT THE VOLTAGE AT POINT OF USE

Compact, inexpensive, these voltage correcting transformers can increase or reduce the available voltage 10%, 13.32%, 20% or 26.64% on single phase circuits as low as 88 volts or as high as 152 volts.

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For large air conditioning units supplied with 230 volt motors and an available 208 volt source of supply, voltage correction can be made quickly, easily. Available for single phase or 3 phase.

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COMPACT HIGH CAPACITY
TROMBONE SHAPE

'Big Heating, Air Conditioning Idea Today Is Perimeter System'

(Continued from preceding page) stallation. The consumer sees the beautiful ads in national publications, but besides that part of the equipment there are hundreds of components, each of which must fit into the other for a good installation.

I. C. Jordan, Los Angeles builder, urged the industry to pay some attention to the National Association of Home Builders. "They are pretty good men, and they are working for you, too."

"The big idea in heating and air conditioning today is the perimeter system, which literally wraps the home in a shield of cold or warm air releasing it along the outside walls in a house."

Sales Harvest

I. M. Remen of Los Angeles, general manager for Lennox Industries, Inc., Pacific Div., gave this message in his talk to the convention, and said "the builder and developer who adopts and merchandises that concept to the consumer will reap the sales harvest."

Glenn A. Ashburn of Culver City, Calif., president of National Heating & Airconditioning Wholesalers Association, spoke on "The Wholesaler's Place In the Industry."

'Should Be Full Line Wholesaler'

"We believe," Ashburn said, "that a wholesaler who is worthy of the name or permitted to use the name 'wholesaler' in the warm air heating and air conditioning industry should be a complete line wholesaler, and carry complete and adequate stock, assume credit risks, and sell to dealers for resale to the consumer."

"We are most emphatic in that we do not believe that our member wholesalers should go into competition with their customers. A wholesaler, or perhaps I should say 'pseudo wholesaler,' who also sells at retail, we feel is in reality a retailer and should be treated as such by the manufacturers and by the dealers who are foolish enough to patronize those who would by-pass him."

Advantages Cited for Buying via Wholesaler

"The following is a list of advantages of buying through the good wholesaler and helps define and clarify the place of the wholesaler in the industry:

"Complete line—one stop; no inventory problems—all models on hand; no inventory investment; no delivery problems; normal billing—no sight draft; exchange service on motors and controls; local engineering help; local service help."

Also, local parts stock; local sales council; local advertising assistance; financial cooperation on advertising; sales and service training schools; personal, close-by service; reputable firm; no direct factory deals; no factory retail branches. . . .

"We believe that any wholesales who would be a credit to this industry should be very conscious of the need for educa-

tion and upgrading generally of this industry all the way from the manufacturer to the consumer in order for us to secure a more adequate percentage of the consumer dollar and, at the same time, render the proper service to the consumer—so that they will enjoy an ever increasing degree of home comfort."

The NHAW . . . has four specific educational program now being carried on throughout the country. They deal specifically with heating and cooling dealer management training, wholesale management training, wholesaler sales training, and dealer sales and merchandising training. This type of activity is a very definite responsibility for the wholesaler."

'Opportunities In Air Conditioning'

"Opportunities In Air Conditioning Through Education" was the subject of the talk by Dr. H. P. Hayes, dean of engineering, California State Polytechnic college.

Among other things, Dean Hayes pointed out that the air conditioning and refrigeration engineering degree program at California State Polytechnic college "is an example of a program developed to suit the needs of an industry."

"Breaking the Brain Barrier" was the subject of a startling address by Tyler Macdonald of Hixson-Jorgensen advertising agency, Los Angeles, before a capacity crowd at the luncheon session.

'Will Take Radical Ideas to Save Industry'

"It will take radical ideas if we are to save the warm air



BUILDING contractors and heating and air conditioning contractors have mutual problems to solve in order to give the customer air conditioning satisfaction, was the conclusion of this panel at summer convention of NWAHACA in San Francisco. L. to r.: building contractors A. F. Oddstad, Redwood City, Calif.; I. C. Jordan, Los Angeles; and Duke Newby, Portland, Ore.; moderator Roland R. Tayler, San Francisco; heating and cooling contractors A. B. Briggs of Portland; D. S. Will, Long Beach, Calif.; and Harold Boothby, Sacramento, Calif.

heating industry," Macdonald to meet requirements of business in this age."

Macdonald took a crack at over-emphasis on Freud in personnel management, said people physically as well as mentally (Concluded on next page)

This adhesive grips while wet... cuts delay in rubber-to-metal bonding



EVEN WET, EC-1300 GRIPS INSTANTLY! YOU CAN INSTALL RUBBER WEATHER STRIPS AND GASKETS WITH NO DELAY FOR DRYING TIME.

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It's EC-1300, the 3M adhesive that's ready to go to work the moment you apply it. Immediately EC-1300 holds weather strips and gaskets firmly in place. You short-cut drying-time delays. Production flows in one smooth, fast operation.

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'Installer Is Mfr. of Air Conditioning System'; Consumer Attitude 'Up to You'

(Concluded from preceding page) are different, have a right to be so, and should not be forced to be other than themselves in these hectic days.

In developing ideas, he said, "decision teams" should be used rather than relying on one executive. Such a team, he said, can put sales or product ideas into three-dimension scope.

Nat N. Leas of Fresno, first vice president of Sheet Metal & Air Conditioning Contractors national association, explained the drive to obtain widespread use of its "certified heating" emblem. He discussed the group's "certified program to educate builder and public to recognize and demand quality heating and air conditioning systems."

Speaking on "Consumer Atti-

tudes Toward Air Conditioning," Herbert T. Gilkey of Cleveland, technical secretary for research of NWAHACA, said "the installer is the manufacturer of the air conditioning system. The cooling unit is merely one of the components.

'Purchases Indoor Comfort from Dealer'

"When a consumer purchases a year-round or winter air conditioning system, he is purchasing indoor comfort by John Jones, dealer—not heating and cooling by XYZ mechanical equipment.

"Attitudes of consumers on air conditioning are largely up to you. Only you can make them positive, for only satisfied customers will spread the word that air conditioning does indeed provide indoor comfort the year around."

The high-powered air conditioning panel went into discussion of sales, engineering, installation, controls, and service.

The moderator, E. A. Myers, Jr., of Los Angeles, vice president and general manager of Prentiss Corp., asserted that "the industry admits it needs you, prefers to do business with you, but you must grab the ball and accordingly gear your business financially, manpowerwise, and mentally, to do air conditioning business.

Set Yourself as 'Air Conditioning Specialists'

"Your 'forward look' should be to establish yourselves as air conditioning specialists, not just as installers," Myers said.

S. F. Skafte of Los Angeles, director of engineering for Utility Appliance Corp., spoke on "Design and Sales of Air Conditioning Equipment for the West Coast Market," stressing the steps that are followed before



THIS luncheon session of NWAHACA San Francisco convention was the big meal event. Speaker shown here attacked our modern world, its pressures and its theories, and said let people be themselves without Freud or other personnel pattern formulas. Speaking on "Breaking the Brain Barrier," Tyler Macdonald, vice president of Los Angeles advertising agency Hixson-Jorgenson, Inc., which handles the stamp plan newspaper advertising program of the Institute of Heating & Air Conditioning Industries of Southern California, said it will take radical ideas to save the warm air heating industry. L. to r. at table: Mrs. Dar Knowles, San Francisco; Sam Terry, Sr., San Leandro, Calif.; Franklin L. Fowler, San Francisco; Minneapolis-Honeywell; James F. Deane, San Francisco; Tuck-Aire Furnace Co.; Robert M. Johnson, Glendale, General Control Co.; F. L. Meyer, Peoria, Ill., president of NWAHACA; George Boeddener, Cleveland, managing director of NWAHACA; and Jim Martin, Cleveland, associate director, NWAHACA.

a unit is ready to be offered.

Albert Freeman of Western Engineers, Inc., Portland, spoke on "Application Techniques In the Pacific Northwest."

In designing, Freeman said, they "insist on a complete survey and air conditioning computation of all internal loads.

"Air conditioning in western Oregon and Washington is coming along slowly, and is ordered in many cases by people who have friends in the east who have it. We in the Pacific Northwest are in the consumer education period trying to sell comfort instead of just cooling."

'Superior Controls For Air Conditioning'

H. A. McIntosh of Glendale, Calif., chief engineer of the controls systems division of General Controls Co., talked on "Air Conditioning Controls, the State of the Art."

He said that "in the past four or five years, domestic air conditioning has evolved from a low volume luxury item with limited application, to a large volume mass production commodity available to the average American homeowner.

"Field experience has enabled

us to develop vastly superior controls suited specifically to the peculiarities of domestic air conditioning.

"Recognize that modern day definition of air conditioning implies simultaneous ability to control both heating and cooling automatically.

Difference Between Two Controls

"Control of noise, circulation, filtering, and humidity, as well as safety controls, is provided by proper equipment design and installation.

"Principal difference between normal heating control and air conditioning control is due to requirement of a different control point for optimum comfort.

"Another factor is cumulative effect of sun load, light load, occupancy load, and cooking load, which in cooling are additive in the requirement, whereas in heating they are deductive."

E. E. Carroll of Portland, president of Kleenair Furnace Co., spoke about "The Heating Contractor Gears For the Air Conditioning Boom."

He said in Portland a full-time man is in the field trying to get every one into the association.

"Most people in the Pacific Northwest," Carroll said, "have not thought it necessary to have air conditioning, but now a few are taking to it, and it is coming along.

"We believe if the builder can get together with the heating contractor, the consumer can have a good job. We expect the air conditioning business to increase with a bang next year. In Portland the school training program in our field has been going on for two year."

Jack Ward of San Francisco, head of Edward B. Ward & Co., Carrier distributor-contractor, speaking on "Service Bears the Load," said "it is basic that importance of a good service department to your over-all business operation be given its proper emphasis.

'Installation, Service Key to Success'

"Key to continuing success in the air conditioning business will be found in installation and service and service facilities that you have.

"Poor performance on the part of your sales force will reduce volume and profits, but

poor performance on the part of your service department can quickly destroy your entire business. Nothing can do you more harm than a dissatisfied customer."

What Advertising Did for Dealer

F. J. Nunlist, Jr., of Milwaukee, executive vice president of Mueller Climatrol Div. of Worthington Corp., just before convention time, had visited Terre Haute, Ind., and brought himself up-to-date on "The Terre Haute Story" of what proper advertising did for an average-size warm air heating contractor.

Mueller Climatrol set up a test advertising program for this Terre Haute dealer because the firm has adequate equipment, shop, and experience, competent journeymen, sufficient stock of equipment, parts, and material, at least one full-time salesman other than the owner, and handles a full line of products.

In 1954 this firm spent \$1,500 for advertising. First year of the test was 1955, when the firm spent \$5,000 for a 40-week newspaper campaign, six-day-a-week radio broadcast, daily television weather spot, a county fair exhibit, and a color film trailer.

"Sales jumped, profits increased 40%, the company has maintained its growth each year, and with success this year will have tripled its business in three years," Nunlist said.

Randall A. Nelson of Cleveland, director of public relations for NWAHACA, moderated the panel on promotion and merchandising for dealer-contractors.

He said: "promotion, advertising, and merchandising are just as important to business success as any other phase of the business. Public opinion means just as much as the sheet metal used so extensively by heating and air conditioning contractors."

'Retailer Most Important Man'

Charles Cashion of Tarrytown, N. Y., director of sales for Heating & Air Conditioning Contractor, said "the retailer is the most important man in the business world today.

"The contractor is our social security because he makes the sales. Every contractor should have an advertising program. Failure to do so may be costing him money."

C. M. Barnes of Chicago, editor of *American Artisan*, detailed dealer merchandising budgets month by month throughout the year.

He said budgets "are very much related to performance. To get the most out of your expenditures, don't waste money. That is why budgets are so important and must be adhered to.

"In a merchandising budget it is important to follow through and see that you are getting your money back in the right proportion from various advertising media you use."

Winding up the convention, General Chairman James F. Deane, vice president and general manager of Tuck-Aire Furnace Co., San Francisco, urged that "we get the lethargy out of our anatomy and tell the public about the comfort we can give them."



PREST-O-LITE

Trade-Mark

Halide Leak Detector

... reacts instantly with pin-point accuracy

Here's a leak detector that is especially designed to speed the location of halide refrigerant gas leaks that are too small to detect with soapy water. Available to servicemen and engineers in two handy kits.

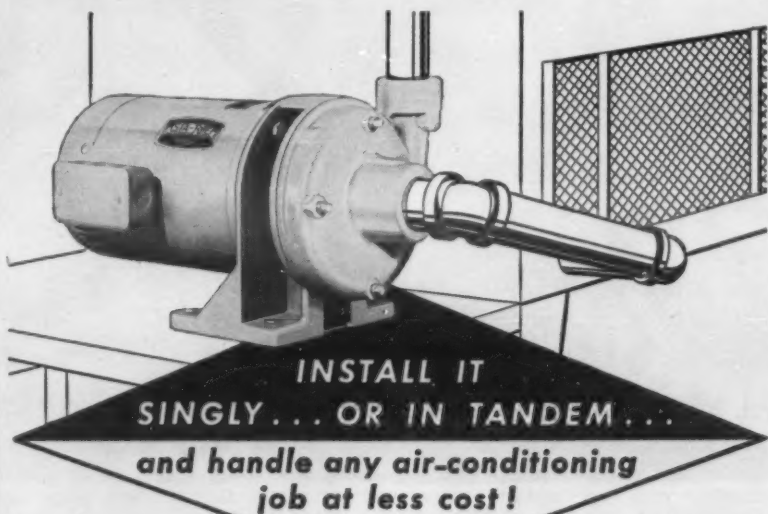
The B Tank Outfit is particularly useful where testing space is limited. The leak detector is connected to the acetylene fuel tank by means of an extra long hose to enable you to reach into corners or between pipes while you leave the tank outside. Instantly detects as little as 100 parts of halide gas in a million parts of air.

Smaller, lighter in weight, and even more compact, the MC Tank Outfit offers the same pin-point accuracy yet can be carried from job to job more easily.

Ask your nearby LINDE Jobber to demonstrate today. Or, if you wish further information, write: Linde Company, Division of Union Carbide Corporation, 30 East 42nd Street, New York 17, N. Y. In Canada: Linde Company, Division of Union Carbide Canada Limited, Toronto.

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STA-RITE AIR-CONDITIONING PUMP

You'll go a long way—installing condensers, towers, chillers—when you hook up with new Sta-Rite Type AC pumps. It's easier to make money on these pumps. Prices are right in line with the lowest. Installation costs are less because these pumps are small, easy-to-handle—easy to "fit-in." Size for size, you can't find a pump that's better made. For instance, capacitor, ball bearing motors are full power—specially designed for these pumps. 12 models, to handle any installation. 220 GPM. Heads to 170 feet. Much higher capacity with tandem installations.



Ask your wholesaler. And write for copy of new bulletin describing Sta-Rite Air-Conditioning Pumps.

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In Canada: STA-RITE Pumps (Canada) Ltd., Ajax, Ontario



For more information about products advertised on this page use Information Center, page 16.

Los Angeles Adds 3 Warm Air Heating Law Revisions Covering Combustible Construction Clearance, Protection

LOS ANGELES — Revised laws concerning warm-air furnaces are now in effect in the City of Los Angeles.

The regulations read as follows:

Effective May 22, 1957, all wood framing within 6 in. of every warm-air furnace shall be covered with: 3/4-in. thickness of plasterboard lath and plaster, or 3/4-in. thickness of gypsum board or asbestos board covered with sheet metal. Such protection is now required under or adjacent to the blower fan compartment.

Effective May 22, 1957, horizontal blower type gas burning, warm-air furnaces and furnaces which do not have the fan compartment under the furnace shall be placed on 4-in. legs and all wood flooring under any such furnace shall be protected with:

1/4-in. thickness of asbestos

mill board covered with No. 24 U.S. gauge sheet metal, or equivalent fire protection. Such floor protection to extend not less than 6 in. beyond the furnace on all sides.

Effective Aug. 22, 1957, all warm-air furnaces shall have the following minimum clearance between the furnace and combustible construction: Sides of the furnace, 6 in. Back of the furnace, 6 in. Front of the furnace, 18 in.

All of the above dates apply to the date of issuance of the building permit or the heating permit.

The Institute of Heating & Air Conditioning Industries, of Los Angeles, has questioned the validity of this ruling and representatives were to discuss these orders with top enforcement officials in the City of Los Angeles Building and Safety Dept.

Fresh Viewpoint: Modernizing New Homes; Contractor Sells Sill Cocks, Check Valves

NEW YORK CITY — New homes for modernization work? This is the specialty of a Long Island contractor with a fresh viewpoint, the American-Standard Plumbing & Heating Div. points out.

"Knowing that some development builders are prone to cut corners, he tours new home developments on summer days when most of the homeowners are busily watering their new lawns," it was explained.

"For a nominal fee he replaces boiler drains, employed as sill cocks, with the real article and supplements this business by adding check valves to the boiler feed circuit.

"Both items are easily sold, the sill cocks because of barked knuckles and leaky valves and

the check valves on grounds of family protection. More often than not, they lead to far more extensive and profitable repairs and additions later," the contractor claims.

The division also notes that "Here's an idea for summer sales promotion—a Sidewalk Sales. One businessman planned a single day-and-night sale that utilized the building, the street, and a trailer for an eye-catching display.

"A large, flat-bed trailer truck was placed in front of the building. Live entertainment was provided at one end of the trailer, and products lined the sidewalk and the rest of the trailer. The sale created quite a crowd—and many new customers."

Detroit PHI Promotes Public Understanding on Radio Show, Pushes Skilled Trades' Functions

DETROIT — The Plumbing & Heating Industry organization of Detroit has just begun sponsorship of a radio newscast which is heard every Tuesday, Thursday, and Saturday at 6:15 p.m. over WXYZ.

Objectives of the sponsorship are "to promote a better public understanding of the important role played in modern living by the plumbing-heating-cooling industry, and the function of the skilled licensed tradesmen employed by the industry," a spokesman explained.

"Commercials stress the long apprenticeship and specialized schooling which tradesmen undergo before qualifying to serve the public. As in PHI newspaper advertising, attention is called to the safety factor involved when homeowners attempt do-it-yourself, or handyman installations of potentially dangerous equipment, such as hot water heaters, boilers, and plumbing lines.

"Various items of plumbing, heating, and cooling equipment are promoted at times in order to stimulate employment oppor-

tunities for the tradesmen involved."

PHI also promotes the plumbing-heating-cooling industry to the commercial user with advertising designed to stimulate commercial and industrial building and modernization. A four-month-long campaign has been running in the *DAC News* to promote air conditioning installations in the Detroit area, and a room air conditioner was one of the prizes featured at the PHI booth at the recent Detroit Builder's Show.

Honeywell Ups Prices

MINNEAPOLIS — Minneapolis-Honeywell Regulator Co. has increased prices on a number of residential heat controls by 3 to 7%. Increases affect such products as room thermostats and oil and gas controls.

Group Names Guenther

DENVER — Clarence Guenther of Air Way Heating Co. has been elected president of the Sheet Metal & Warm Air Heating Contractors Association of Denver.

Home Modernization Seen as Key To Plumbing, Heating Profits

DALLAS — With new home construction — the source of nearly two-thirds of their business—shrinking away, plumbing contractors who met in convention here recently were urged to move into the home modernization market.

Right now less than 30% of plumbing industry sales go into replacement or addition of plumbing, heating, and air conditioning in existing homes, it was pointed out. But some members of the industry say home modernization and remodeling represent a potential \$15 million a year market, more than double total sales in 1956.

SEES \$7 BILLION MARKET

Wilbur S. Hokum, president of A. A. Hokum Co., Beverly Hills, Calif., newly-elected president of the National Association of Plumbing Contractors, believes the replacement market can add around \$7 billion to the plumbing industry's dollar volume.

An increasing number of homeowners are borrowing to fix up their present dwellings, it was explained. FHA Title I home improvement loans dipped along with new home building in 1955, but in the fiscal year ended March 31 this year, loan volume climbed to \$744,155,152, up from the \$635,835,311 in the previous fiscal year.

4 CATEGORIES

Grown big and diversified with the postwar building boom and development of complex systems of plumbing, heating, and air conditioning, the plumbing industry falls into four main categories, new commercial and industrial, commercial repair, new residential, and home repair.

Repair business remains at its normal level, it was indicated, but profits in the commercial and industrial field have been sent tumbling by competition from residential contractors invading that business as their housing sales fell off.

If more plumbing contractors in the new home field would shift into home modernization rather than moving into the already crowded commercial building field, both they and the industry would benefit, according to retiring president of NAPC, William A. Landers of Oklahoma City.

'FIELD ALMOST UNTAPPED'

"There's plenty of money available in FHA Title I home improvement loans, but the modernization field remains virtually untapped because the contractors have never really needed the market before," he added.

It was pointed out that to make the transition from new home installations to the home modernization field, plumbers must change "their traditionally conservative ways for modern methods of merchandising and advertising."

Manufacturers of plumbing supplies are also taking and interest in the replacement field. In August, plumbing fixture producers will be in Chicago to consider a proposed plan to spend \$1 million in the next three years to promote the market.

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AND REFRIGERATION

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More pages, more names, more sections, more products—
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Complete up-to-the-minute listings—

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Company
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City Zone State

Men on the Move . . .

Norge Div., Borg-Warner Corp.—Promotion of **JAMES E. DOUGHTY** to assistant to the national manager for home laundry equipment sales has been announced. He has been a midwestern district sales manager.

Reynolds Metals Co.—**ROBERT R. HENNINGSEN**, former regional representative, has been named assistant manager, appliance and equipment market.

Fairbanks, Morse & Co.—**ROBERT H. MORSE, JR.** has been elected president and chief executive officer; **GORDON R. ANDERSON**, vice president-engineering; **F. M. MASON, JR.**, vice president-government business; **ROBERT DANA BROWN**, secretary and assistant treasurer; and **R. E. WHITELEY**, assistant secretary.

Kold-Hold Div., Tranter Mfg. Co., Inc. (Lansing, Mich.)—Appointment of **BRUCE F. BALCOM** as assistant service manager has been announced. He has been associated with Danek Refrigeration Sales &

Service, Owosso, Mich.

Sporlan Valve Co.—**JOSEPH R. NOLET** has been named to replace **THOR GISLASON** as Boston office manager. He was formerly associated with a Boston air conditioning and refrigeration firm. Gislason has been named to the engineering staff in the St. Louis home office as part of a program to expand the company's engineering, research, and development facilities.

Air Conditioning Div., Remington Corp.—Appointment of **WALTER W. OMAN** as service manager has been announced. He previously was assistant factory service supervisor for Cherry-Burrell Corp. at its Little Falls, N. Y. plant. He replaces **WILLIAM FIGG** who resigned.

Dunham-Bush, Inc.—**THOMAS W. CASHMAN** has been named purchasing agent for Brunner Div. He has been staff assistant to the president.

Koch Refrigerators, Inc.—Appointment of two new regional

sales representatives and a sales engineer has been announced. **ERNEST L. FLEISCHMAN**, a commercial refrigeration representative, has been assigned to the New England territory. **PAT A. BENOLIEL**, a food service equipment sales supervisor, has been named representative in eastern Canada. **JACK HABER**, an assistant merchandising manager with a paper firm, has been named sales engineer.

Heating & Air Conditioning Div., National-U. S. Radiator Corp.—**RAYMOND S. DOHERTY** has been appointed builder sales and promotion manager. He was formerly manager of packet sales.

Robertshaw-Fulton Controls Co.—**THOMAS T. ARDEN** has been elected president and member of the executive committee succeeding **JOHN A. ROBERTSHAW**, who becomes chairman of the board and a member of the executive

committee; **RICHARD S. REYNOLDS, JR.**, former chairman, heads the three-member committee. Arden had been in charge of western operations for the firm. **CHARLES E. SMITH** has been appointed assistant national service director. He served as manager of the Product Service Div. of A. O. Smith Corp.

Westinghouse Appliance Sales Div. (Buffalo branch)—**CHARLES E. SCHUSTER**, formerly vice president in charge of merchandising products of Buffalo Electric Co., Inc., has been named district manager of the new wholesale branch set up there. Buffalo Electric will continue as exclusive agent distributor in the area for Westinghouse radios, socket appliances, fans, motors, and other items, but has given up the distributorship for major appliances and television sets.

Curtis Mfg. Co.—**T. B. LEVENE**,

who has worked in production control and purchasing, has been appointed manager of production control and purchases.

Simpson Electric Co.—**John F. SCHIPITZ** and **ROBERT VANDERVOORT** have been added to the sales staff.

American Potash & Chemical Corp.—**MODESTO L. LEONARDI** has been named manager of plant production at Trona, Calif. **A. J. ANDERSON**, who formerly held that post, has been appointed advisory engineer for the facility.

Graybar Electric Co. (New York City)—**A. G. NAYLOR**, appliance sales manager for the Harrisburg, Pa. branch, has been named regional appliance sales manager in charge of the Youngstown, Ohio and Erie, Pa. trade areas. **J. T. BELL** succeeds him in Harrisburg. **L. T. JAMISON** has been appointed manager, appliance sales, for Erie and **T. J. LECLAIR** is San Francisco. **M. M. OWEN** was named manager, appliance sales, in the Oakland, Calif. branch and **L. V. CHASE** succeeds him as manager, appliance promotion, in San Francisco.

Square D Co.—**PAUL R. SHAWVER** has been named manager of the Cedar Rapids, Iowa plant. He has been assistant to the vice president of the distribution equipment division. Shawver succeeds **C. Howard Brittenham**, who has resigned to become vice president of Yuba Consolidated Gold Fields, San Francisco.

Central Jobbing Co. (Shreveport, La.)—**RAY BEACH** has been placed in charge of air conditioning and cooler sales for the company.

They Won't Be Home

(Plant Vacation Schedule)

AUGUST 1 or earlier

This is the third vacation schedule in a series aimed at keeping the industry informed so as to eliminate useless calls and aid purchasing departments in securing adequate stock to carry over until business-as-usual. This list will not be repeated. CLIP and SAVE for future reference.

Company	Shutdown Period		Shipments From Plant
	Plant	Office	
Ace Industries, Inc.	7/26-8/11	None	Emergency
Admiral Corp., Galesburg, Ill.	6/14-7/9	6/14-7/9	Stock Only
American Machine & Foundry Co., Lowerator Div.	7/26-8/12	None	Emergency
Automatic Machine Prod. Sales Co.	7/26-8/5	7/26-8/5	None
Bridgeport Thermostat Div., Robertshaw-Fulton Controls Co.	7/19-8/5	7/19-8/5	Emergency†
Brundage Co.	6/29-7/7	6/29-7/7	Stock Only
A. W. Cash Valve Mfg. Corp.	7/1 -7/12	None	None
Commercial Controls Corp.	7/27-8/11	7/27-8/11	Emergency
Dole Refrigerating Co.	7/29-8/11	7/29-8/11	Emergency
Eaton Mfg. Co., Foundry Div.	7/29-8/11	None	Emergency
Electromode Div., International Register Co.	7/31-8/18	7/31-8/18	None
Flakice Corp.	7/29-8/9	None	Emergency
Fogel Refrigerator Co.	7/26-8/12	None	Emergency
General Electric Co., Small Integral Motors Dept.	7/29-8/9	None	Emergency†
Capacitor Dept., Hudson Falls, N. Y.	7/15-7/26	7/15-7/26	Emergency
Home Heating & Cooling Dept., Bridgeport, Conn. Plant	7/29-8/16	7/29-8/16	Regular
Heatron, Inc.	6/29-7/8	None	Regular
Hedeman Products, Inc.	7/1 -7/12	None	Regular
Holderle Brothers, Inc.	7/19-8/3	7/19-8/3	Emergency
Hotpoint Co.	7/26-8/9	7/26-8/9	Regular
Industrial Acoustics Co., Inc.	7/27-8/11	None	Emergency
Jordon Commercial Refrigerator Co.	7/26-8/12	None	None
Kenmore Machine Products, Inc.	7/26-8/5	7/26-8/5	None
Lennox Industries, Inc., Columbus, Ohio division	7/1 -7/14	None	Emergency
Marco Industries, Inc.	7/27-8/5	7/27-8/5	Emergency
James P. Marsh Corp.	7/19-8/5	7/19-8/5	Emergency
Meriam Instrument Co.	7/27-8/12	7/27-8/12	None
Modern Machine Works, Inc.	7/22-8/5	7/22-8/5	None
Paragon Electric Co.	7/27-8/4	7/27-8/4	None
Penn Brass & Copper Co.	7/29-8/11	None	Emergency†
Powers Regulator Co.	7/19-7/26	None	Regular
Ranco Inc.	7/26-8/5	7/26-8/5	None
Ranney Refrigerator Co.	7/19-7/26	7/19-7/26	Emergency
Rudy Mfg. Co.	7/26-8/12	7/26-8/12	Regular
Sherer-Gillett Co.	7/29-8/4	7/29-8/4	Emergency*
A. O. Sutton Corp.	7/4 -9/3†	7/4 -9/3†	Regular
Tenney Engineering, Inc.	7/20-7/27	None	Stock Only
Torrington Mfg. Co.	7/27-8/11	7/27-8/11	None
United Refrigerator Co.	7/3 -7/21	None	Regular
J. E. Watkins Co.	7/28-8/3	7/28-8/3	Regular
Westinghouse Electric Corp., Electric Appliances Div.	7/13-8/4	7/13-8/4	Stock Only

*Emergency orders filled for parts. Refrigerators from stock only. †Stock items only ‡Inventory.

Get YOUR SHARE of the 2 to 5 ton jobs with LARKIN AIR CONDITIONERS

Millions of homes and small buildings are prospects for complete air conditioning systems. And Larkin makes it possible for any dealer or contractor to enjoy a share of this profitable market in the 2, 3, and 5 ton range.

Three types of Larkin units are available: The DAC for installation in the duct of forced air systems; the FP for installation in the plenum of vertical flow furnaces; and the DAH, complete with centrifugal fan, motor, and filters, for installation in attic or crawl space. In all cases, dealers can use compressors of their own choice and locate them for maximum accessibility and minimum noise. Larkin Zephyrcon air cooled condensers of matching capacities are ideal companions for these compact, highly efficient, Larkin air conditioning units.

Get the facts from your wholesaler, or write direct for complete details in Bulletin 1054.



- 2, 3, 5-ton capacities
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- Evaporator equipped with pressure-type distributor and external equalizer connection
- Mastic coated drain pan
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Air Conditioning and Refrigeration

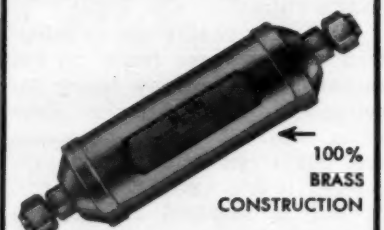
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Chicago 8, Ill.

Refrigeration Problems And Their Solution

(As Written by Paul Reed)

The late Paul Reed, one of the refrigeration industry's most respected writers and teachers, wrote a column on "Refrigeration Problems and Their Solution" which was published regularly in AIR CONDITIONING & REFRIGERATION NEWS for more than 15 years.

Readers throughout the years have hailed this written material as some of the most practical and helpful that has ever been published. Fortunately, the author had an opportunity to revise some of this material in the months before his untimely death, and the NEWS is re-publishing some selected instalments with the thought that it will be useful and interesting to its present readership.

Hot Weather Hints (1)

In late spring, after weeks of mild days, suddenly hot weather is here again. Thermostats are staying closed most of the time and refrigeration service engineers are working long hours keeping in operation machines whose weaknesses unnoticed all winter when the load was light, are now requiring that refrigerant be added, loose belts tightened, compressors overhauled, weak motor reworked, dirty condensers cleaned, and many other conditions corrected that were not bad enough to need attention in cool weather.

There are always a few machines that were either undersize when they were originally installed or which their owners have outgrown since. They really need replacing with new, larger equipment, and they offer the service engineer a proper opportunity to make a sale of the necessary replacements, and at the same time, do the owner a service; for in the long run, he is money ahead to have adequate equipment.

Often, however, the owner cannot see his way clear to buy new equipment. He may not be able to spare the money, he may expect to make changes later and new equipment now would be a double expense, or for several reasons best known to himself, he may want to just "get by" as cheaply as possible for the present; so he puts it up to the service engineer to do what he can.

FIRST-AVOID LOSSES

The first thing to do is to see that there is no avoidable waste of refrigeration; that the doors fit tightly and the door gaskets are in good condition; that awnings or shades are used to keep direct sunlight off the case or refrigerator; that doors are not unnecessarily left open; that hot foods or other products be cooled to room temperature before being put into the refrigerator; that the cabinet itself is in good condition; that the vapor seal has not been damaged and the insulation become wet; etc. Every possibility of this sort should be explored.

SPLIT UP MULTIPLES

If it is a multiple installation, perhaps one of the fixtures can be taken off and run by a small separate unit, which the customer can be induced to buy. This may

be particularly helpful if the fixture that can be taken off and run by a separate machine, is a low temperature cabinet, such as an ice cream or frozen food cabinet.

The load that it imposes may represent only say, one fifth of the total load in B.t.u., but removing it to a separate condensing unit may have the effect of remov-

ing two or three times that much load; for its removal may allow the condensing unit to operate on a much higher suction pressure, and thus at an increased capacity of one third more than previously.

True, if the low temperature cabinet was that small a percentage of the total load, it should not have been multiplied with the other fixtures in the first place, for it is bad practice to include on a multiple system, a low temperature cabinet or other low temperature load that is less than one half of the total load.

Nevertheless, multiple systems have been installed that did not conform to that rule and some are still in operation, although the cost of operation is excessive and/or the control of temperature is not very good.

LOOSE BELTS OR LEAKING VALVES

It is not uncommon to find that the belts are so loose and slipping so much that the compressor is running under normal rated speed.

Leaking discharge or suction valves in the compressor will re-

sult in reduced compressor capacity. These will be indicated by higher than normal suction pressures, but by discharge pressures somewhat below normal.

A FULLY ACTIVE EVAPORATOR

As mentioned in a previous paragraph, increasing the suction pressure results in increasing the capacity (and the efficiency, too) of the compressor. Inspection of the evaporators and of the suction lines just as they leave the evaporators, may reveal that the evaporators are not fully active. The expansion valves may be adjusted to feed somewhat more heavily (reduce the superheat) or in some instances, the feeler bulb may be moved away from the evaporator.

Making the evaporator more fully active accomplishes two desirable objectives.

(1) It will probably raise the suction pressure and therefore increase the capacity of the condensing unit.

(2) It will increase the active evaporator surface and thereby

increase the rate of cooling done by the evaporator; and in gravity-type evaporators, it will also increase the rate of airflow from the evaporator to the product to be cooled.

DEFROST THE EVAPORATOR

An evaporator is at its best efficiency when it is free of frost or ice, for these tend to insulate the evaporator; and the air that comes into contact with the evaporator is not cooled to as low a temperature. See, therefore, that finned evaporators that operate on a defrosting cycle are fully defrosted. If necessary, reset the defrost control so as to obtain a clean defrost before the machine starts.

Frost building evaporators, such as plates and evaporators in household refrigerators will normally have some frost on them, but excessive amounts (over about 1/4 in.) should be scraped off, or the evaporator defrosted as often as necessary to keep frost accumulation at a minimum.

(To Be Continued)

REMOVE THE SCALE... SAVE THE EQUIPMENT!

"VIRGINIA's" new solid scale remover
is pronounced safest for use on dip zinc coated,
galvanized and aluminum water-cooled equipment



Every drum of new "Virginia" solid scale remover bears the seal of safety which relieves you of worry about equipment injury. Use "Virginia" to restore peak heat-transfer efficiency of your water-cooled equipment—quickly, economically. Avoid costly shutdowns—eliminate the personal hazards of handling corrosive liquids. Insist on the new, improved "Virginia" formula with the seal of safety atop the drums. Packed in 10 and 50-lb. drums.



STOP SCALE FORMATION with "Virginia" Water Treatment and Corrosion Inhibitor. Holds scale-forming solids in suspension or solution, greatly reducing scale buildup on metal surfaces; protects against corrosion. Packed in 6 and 50-lb. containers.

Order these field-tested products from your wholesaler or write REFRIGERATION DIVISION, Virginia Smelting Co., 178 Jefferson St., West Norfolk, Va.



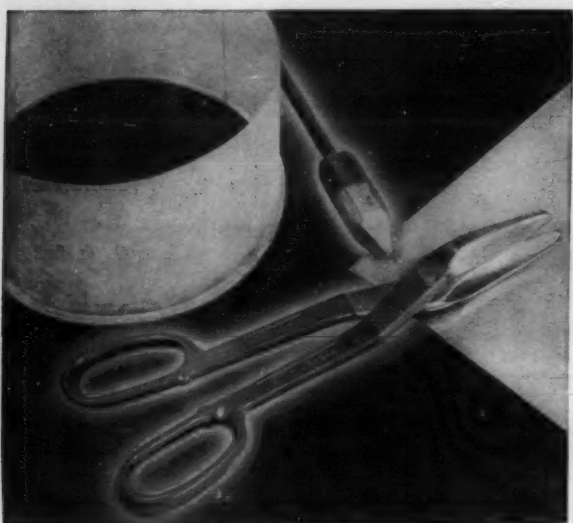
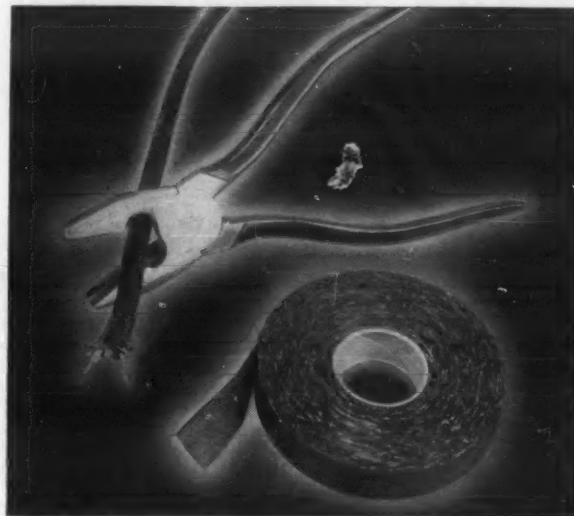
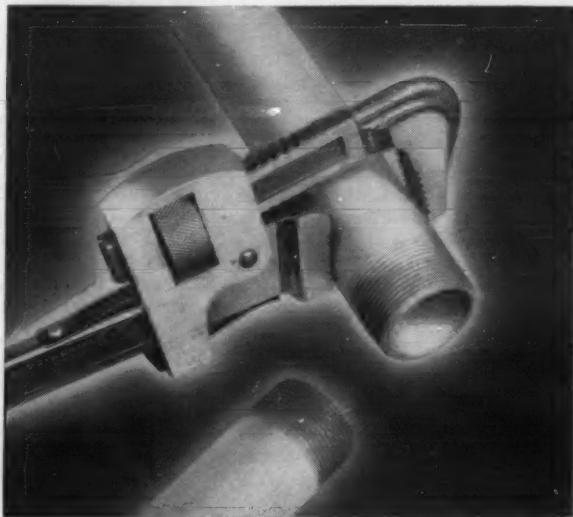
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Which type of distribution will bring you the best results in the residential air conditioning market?



FROM every side, there is speculation on who will do the bulk of selling in the residential air conditioning field. They've all been named, from appliance dealer to electrical contractor, from plumber to venetian blind distributor.

The reason for this speculation: The industry must expand its distribution rapidly to meet the growing demand. This rapid expansion is bringing in new air conditioning dealers from many sources. And the NEWS is the only medium that can keep up with

this changing distribution pattern.

The NEWS is investing tens of thousands of dollars to select from appliance dealers, plumbing contractors, heating contractors and others, those who will be the important air conditioning contractors of tomorrow. These new subscribers prove their interest in the field by *paying* for their NEWS subscriptions—to get the help, news, and information they need to sell and install residential air conditioning. These new groups are turning to the NEWS because an air conditioning

dealer is an air conditioning dealer, whether he was once a furnace man, a refrigeration man, or whatever.

What better showcase for your selling message than in the one business paper which *seeks out and finds* the men doing residential air conditioning as no other publication can! For more information on how the NEWS can keep you in touch with your primary market, call your nearest NEWS representative or write direct:

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FRANKLIN 2-8098, AL SCHILDHAMMER.

LOS ANGELES, 4710 CRENSHAW BLVD.,
AXMINSTER 2-9501, JUSTIN HANNON.

DETROIT, 450 WEST FORT ST.,
WOODWARD 2-0924, J. B. SULLIVAN.

AGA Task Force Sets Cooling Drive--

(Concluded from Page 1, Col. 5) the new special task force group operating under the General Promotional Planning Committee of the AGA PAR Plan.

The committee, scheduled to hold its first official meeting in New York City on July 12, will coordinate the stepped-up efforts of industry research committees, gas air conditioning equipment manufacturers, and the sales and promotion organizations of utility companies.

"Members of the new committee represent practically every region in the country, reflecting the nationwide interest by utilities in gas air conditioning," it was noted. Committee members are, in addition to Selzer:

W. D. Williams, vice president sales, New Jersey Natural Gas Co., Asbury Park, N. J., and chairman of the AGA Residential Gas Section.

J. Robert Delaney, manager of gas sales, Cincinnati Gas & Electric Co., and chairman of the AGA Industrial and Commercial Gas Section.

B. C. Adams, Jr., vice presi-

dent and general manager, The Gas Service Co., Kansas City, Mo.

Harold F. Carr, manager, residential sales promotion, Baltimore Gas & Electric Co., Baltimore.

H. William Doering, heating and air conditioning manager, Springfield (Mass.) Gas Light Co.

E. L. Henderson, vice president, United Gas Corp., Shreveport, La.

David J. Kerr, director of business development, Southern Union Gas Co., Dallas.

John S. McElwain, sales manager, East Ohio Gas Co., Cleveland.

Frank N. Seitz, vice president sales, Southern Counties Gas Co., Los Angeles.

G. J. Tankersley, executive vice president, Gas Light Co. of Columbus, Columbus, Ga., and chairman of the Southern Gas Association Air Conditioning Committee.

R. J. Vandagriff, vice president sales, Laclede Gas Co., St. Louis.

12 Detroit Heating Men Licensed--

(Concluded from Page 1, Col. 4) have asked for clearance from their board. All received it. Only three took examinations for a heating license. One received a Class A license for both gas and oil, one received a Class A license for gas only, and the third failed to pass. None asked for a restricted license.

36 Applications

Thirty-six heating contractors have applied for refrigeration licenses since the amendment took effect. Of these 34 were given clearance by their examining board.

Of the 34 given letters of clearance, 20 came before the refrigeration board for examination.

Of the 20, four took the examination for a Class B license. Three passed and one failed.

Sixteen applied for a restricted license. Twelve passed the examination and four failed.

'Most Failures Due To Lack of Study'

Those who failed to pass are permitted to take the examination again after 90 days, Drogosch pointed out. Most of the failures to date have been due to lack of preparation, he believes.

All but two of the failures occurred early in the year. This spring a number of schools were held by some air conditioning distributors and manufacturers here to teach heating men the fundamentals of refrigeration and how to install their units.

The beneficial results of these schools are revealed in the license examination, Drogosch noted. In April, eight men took examinations for a restricted license and one for a Class B license. All passed. In May, five men were examined for restricted licenses. Three passed and two failed.

Scores on the examinations were high, too, he revealed. Even the failures were not so far from passing level that they might not be able to qualify on the second time around.

Drogosch believes that results so far justify the establishment of restricted licenses.

Answering criticism of those who question the value of the restricted refrigeration license because it permits no servicing, Drogosch points out that the applicant is free to choose whichever license he desires. Out of the 20 who took the examination, 16 applied for a restricted license.

In reply to charges that questions for Class B examination are too tough for the man who wants to handle only residential air conditioning and not get into ammonia or commercial refrigeration, Drogosch declared that the questions are general in nature and few apply to specific types of equipment.

An applicant does not have to answer all the questions correctly to get a license. He can skip the few that do not apply to his business and still get a passing grade, providing he has enough general knowledge of refrigeration to do the service work he seeks, Drogosch contends.

'Greater Interest In Cooling'

The high proportion of heating men moving into refrigeration as compared to refrigeration men moving to heating, as

indicated by the applications for licenses, is due to the greater interest in air conditioning during the early part of the year and to the fact that there are three times as many heating contractors in the city as refrigeration contractors, it was explained.

As of March 11, there were 363 holders of Classes A, B, and C refrigeration licenses in the city. There were 33 Class A licensees (domestic refrigeration only), 153 Class B, and 177 Class C (unrestricted).

These figures do not include any of the restricted license holders or any of those who applied for and received refrigeration licenses during the second quarter of the year.

At the end of 1956, there were 951 licensed heating contractors operating in the city, Drogosch reported.

James M. Burke Dies

BUFFALO—James M. Burke, 56, who supervised the air conditioning of many of Buffalo's largest stores and buildings, died suddenly recently.

An employe of Mollenberg-Betz Machine Co. for 39 years, Burke started as an apprentice machinist. He worked his way up to journeyman steamfitter and then was transferred into the air conditioning and refrigeration division.

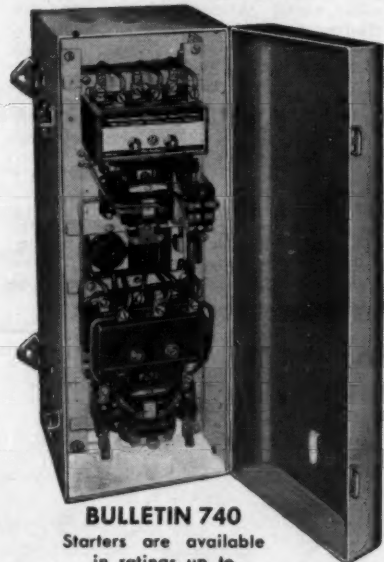
For the past ten years he had been superintendent of a division.

Cooled Garment Plant

WAYNESBORO, Ga. — The Waynesboro Garment Co. has completed its new 75,000-sq. ft. air conditioned building. The building and equipment cost approximately \$150,000, according to Allen Steinberg, president of the firm.

AUTOMATIC STARTING for Compressors

Smooth Acceleration—No Heavy Current Inrush



BULLETIN 740
Starters are available in ratings up to 200 hp, 220-440-550 v.

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MOTOR CONTROL

COPPER COILS WITH ALUMINUM FINNS

1/3 and 1/2 H.P. CONDENSERS

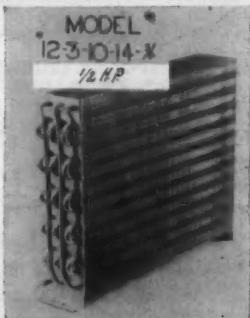
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3/8" copper tubing, aluminum fins, TWO-ROWS 12" high, tube-spacing 1" x 1" — 14 3/4" wide—10 fins per inch.

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EACH 3-LOT-EACH
PRICE—\$5.85 \$4.85



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(All above coils are sealed and dehydrated.)

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Model SU100L actual size

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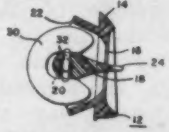
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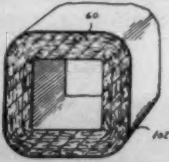
PATENTS Weeks of April 30 and May 7

2,790,371. ADJUSTABLE AIR OUTLET GRILL. Harold A. Wheeler, Dayton, Ohio, assignor to General Motors Corp., Detroit.



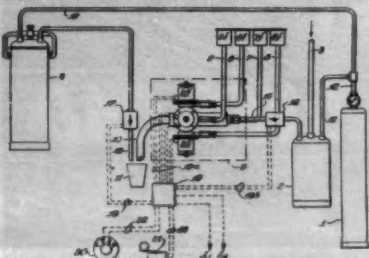
1. In an air grill, the combination of a main frame having an elongated slot formed therein, a first relatively long and narrow vane pivotally carried by said frame and extending substantially the full length of said slot for controlling the direction of the flow of air through said slot in one plane, a plurality of spaced vanes, each of said spaced vanes having a slot opening at a portion of its rim in which slot a portion of said first vane is positioned. . . .

2,790,464. INSULATED DUCT. Joseph F. Stephens, Kansas City, Mo., and Glenn W. Kerr, Mission, Kan., assignors to Gustin-Bacon Mfg. Co., Kansas City, Mo.



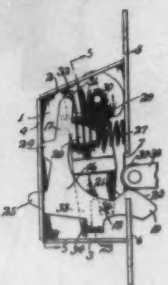
1. An insulated duct comprising a hollow conduit having a wall formed of glass fibers of an average diameter of less than ten microns bonded with a binder in an amount between fifteen percent and thirty-five percent by weight of the wall material, said wall material having a density of between two pounds and five pounds per cubic foot.

2,790,580. SELECTIVE BEVERAGE DISPENSER. Samuel Kresberg, Miami, Fla.



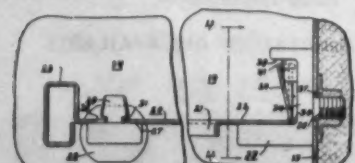
1. A blending device for an automatic dispenser comprising a faucet means adapted to conduct and discharge from one end carbonated water therein at a predetermined pressure, said faucet having an adjustable valve means in the opposite end thereof for adjusting the flow of said water fed thereto, an electro-magnet flavor fluid injector having a body means forming a chamber including inlet and outlet passageways therein. . . .

2,790,665. REFRIGERATOR LATCH. Anthony Vanderveld, Grand Rapids, Mich.



1. A latch comprising a casing, a latch lever within said casing, said casing at one side having spaced aligned slots lengthwise of said side thereof, an opening in the opposite side of said casing, and a slot in said opposite side, lengthwise thereof extending from an end of said opening, said lever having an arm generally paralleling the first mentioned side of said casing, said arm having projections thereon passing through the slots of said first mentioned side, and a second arm connected with and located generally at right angles to the first arm. . . .

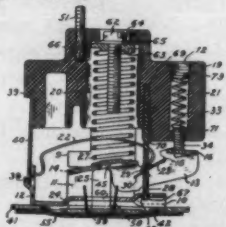
2,790,686. REFRIGERATING APPARATUS. Orson V. Saunders and Carl F. Petkowitz, Dayton, Ohio, assignors to General Motors Corp., Detroit.



1. In a refrigerator having walls forming a food storage compartment therein, a plurality of shelf supports on different walls of said compartment, a sheet metal shelf having an integral resilient flange extending

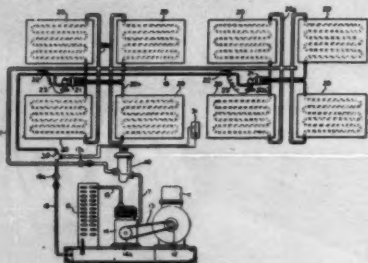
along one side thereof, said shelf being movable into said compartment in supported position on said supports, and means engageable by the resilient flange on said shelf upon moving the shelf into its supported position for flexing said flange and yieldingly wedging the shelf between said supports.

2,790,870. FLUID PRESSURE ACTIVATED SWITCH. Gilbert H. Hansen, Batavia, Ill., assignor to Furnas Electric Co., Batavia, Ill.



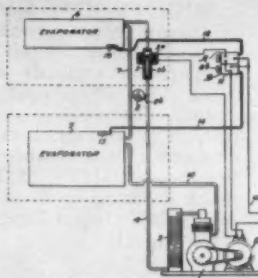
In a fluid pressure actuated electric switch, a rigid frame having therein an opening bounded by spaced opposite edges, a lever fulcrumed at one end upon said frame and having its medial portion swingable relative to said opening, fixed and movable switch contacts mounted upon said frame, toggle elements operable by said lever to close and open said contacts with a snap action, a spring coacting with one face of said medial lever portion to displace said toggle elements in one direction, a U-shaped fluid pressure actuated stirrup coacting with the opposite face of said medial lever portion to displace said toggle elements in the opposite direction. . . .

2,791,098. CAR REFRIGERATION ASSEMBLY WITH INTERNAL COMBUSTION MOTOR. Herman W. Kleist, Hollywood, Ill., assignor to Dole Refrigerating Co., Chicago, Ill.



6. In a system of vehicle refrigeration, insulating walls surrounding and defining a space to be refrigerated, a diesel motor adapted for normally continuous operation, a compressor, means for driving the compressor normally constantly from the motor, a condenser connected to the pressure side of the compressor, a liquid refrigerant supply duct extending from the condenser, thermally responsive means for controlling the flow of liquid refrigerant through said supply duct in response to temperature conditions within the storage space, a plurality of evaporators in heat exchange relation with the interior of the storage space connected to receive refrigerant from said supply duct. . . .

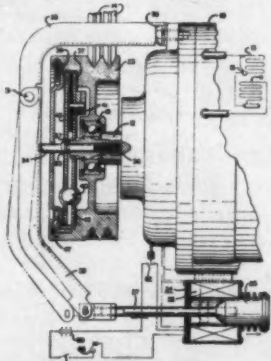
2,791,099. CONTROL SYSTEM FOR MULTI-TEMPERATURE REFRIGERATORS. Wayne D. Jordan, Chicago, Ill.



1. In a refrigerator having the refrigerated space divided into a warmer compartment and a colder compartment, refrigerating means including an evaporator in said warmer compartment and an evaporator in said colder compartment, said means including a compressor unit located externally of the refrigerated space, refrigerant tubing for delivering refrigerant from the compressor unit to the inlet side of said warmer compartment evaporator, refrigerant tubing for returning refrigerant from said colder compartment evaporator to said compressor unit, a compressor actuating switch responsive to the temperature in said warmer compartment and a second compressor actuating switch responsive to the temperature in said colder compartment, actuation of either one or both of said switches in response to predetermined rises of the temperature in their associated compartments being effective to operate said compressor unit so as to deliver refrigerant to said first named tubing. . . .

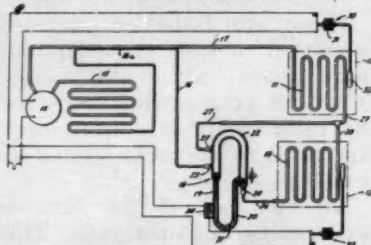
2,791,100. VEHICLE REFRIGERATING APPARATUS. Philip W. Maurer, Dearborn, Mich., assignor to General Motors Corp., Detroit.

3. In combination, a shaft, a pulley rotatably supported on said shaft, self-energizing clutch means for transmitting power from said pulley to said shaft, a plunger for initiating opera-



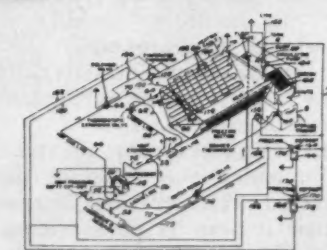
tion of said self-energizing clutch means, said shaft having a central recess for supporting said plunger, a first spring biasing said plunger outwardly into clutch engaging position, means including a solenoid for actuating said plunger, said actuator means including a second spring for opposing the force of said first named spring and said solenoid. . . .

2,791,101. PLURAL TEMPERATURE REFRIGERATOR. Elmer W. Zerfoss, Jr., Philadelphia, Pa., assignor to Philco Corp., Philadelphia, Pa.



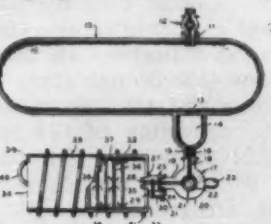
1. In a refrigerating system including means for supplying liquid refrigerant and means defining a pair of paths to be fed, selectively, from said supply means, flow control means, comprising: first and second upstanding conduit means having their lower portions in fluid flow communication, the first conduit means being provided with a refrigerant inlet port through which liquid refrigerant from said supply means is fed directly to said first conduit means, said first conduit means also being provided with a refrigerant outlet port disposed above the level of said inlet port and adapted to feed one of said paths, said second conduit means being ported for outlet communication with the other of said paths at a level below the level of the said outlet port. . . .

2,791,103. CONTROLS FOR AN ICE MAKING MACHINE. Everett N. Guild, Smithsburg, Md., assignor to Hooper, Kimball & Williams, Inc., Boston, Mass.



1. An ice making machine having a plurality of freezing cups submerged in a tank of water, refrigerating means for applying a freezing temperature to said cups, defrosting means for applying a melting temperature to said cups, said defrosting means being adapted to heat a predetermined number of said cups at a slower rate than the rest of said cups whereby the ice will be freed from said predetermined number of cups after the ice has been freed from all of the rest of said cups, said defrosting means comprising pipes engaging all of said cups and having heated gas therein and an electrically heated cable engaging only the rest of said cups. . . .

2,791,104. LIQUEFIED GAS REFRIGERATOR UNIT. Angel Dux, Montevideo, Uruguay.



1. In a refrigerating unit, an injector for supplying refrigerant under pressure, a closed vessel communicating with said injector and constituting an expansion chamber, a plurality of spaced apart partition discs secured to the interior of said vessel, some of

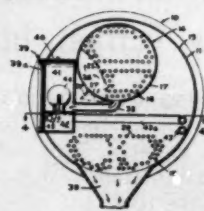
Editor's Note: Patents described here have been selected from the "Official Gazette" of the United States Patent Office. They offer only a brief summary of each invention. In some instances only the first part of the digest is presented.

Printed copies of patents, reissued patents, and patent designs may be secured from the Patent Office; patents and reissues are 25¢ each, while designs are furnished at 10¢ each. Copies should be ordered by number and title and a mention of the fact if they are either Designs or Reissues.

Address orders for any of the above to: Commissioner of Patents, Washington 25, D. C.

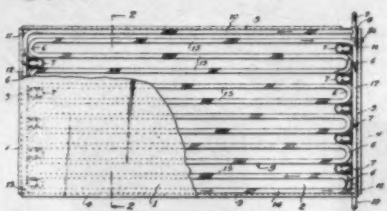
said partition discs defining peripheral openings and the other of said partition discs defining centrally positioned openings, said discs alternating to force the refrigerant to follow a tortuous path through said expansion chamber, said vessel being provided with outlet means remote from said injector and a tube connected to said vessel, said tube communicating with the atmosphere at a point remote from said outlet.

2,791,105. REFRIGERATION APPARATUS. David Aronson, Bloomfield, N. J., assignor to Worthington Corp., Harrison, N. J.



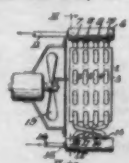
1. In a refrigeration system, a shell forming a condenser-evaporator unit, a compressor unit for compressing a vaporized refrigerant fluid therein, a cylindrical casing disposed in said shell forming a condenser therein, a cylindrical tube bundle having an inlet and outlet end enclosed by said casing for passing cooling fluid therethrough, said condenser having an inlet opening therein for receiving refrigerant fluid therethrough to be condensed. . . .

2,791,106. EVAPORATOR PLATES. Herman W. Kleist, Hollywood, Ill., assignor to Dole Refrigerating Co., Chicago, Ill.



1. In a cold plate evaporator, a pair of plane generally parallel side walls connected by marginal walls around their peripheral edges in a generally gas tight relation to define a sealed generally rectangular chamber, and a continuous tube pattern confined in the chamber adapted to contain and circulate a refrigerant, including a plate edge supporting and abutting, flexure resisting outer frame composed of generally rectilinear tube lengths interconnected by internal right angle smooth bends, and an interior sinuous tube body composed of generally parallel rectilinear tube lengths interconnected by integral smooth approximately 180° bends, inlet and outlet connections for the tube pattern extending through the marginal walls for connection to a refrigerating unit. . . .

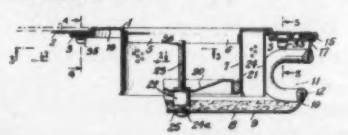
2,791,107. MANIFOLD CONSTRUCTION FOR HEAT EXCHANGE SYSTEMS. Hyman Malkoff and Israel Kramer, Trenton, N. J., assignor to Kramer Trenton Co., Trenton, N. J.



1. A heat exchange unit, such as a refrigerant evaporator, comprising, a plurality of refrigerant conduits arranged in side by side relationship, means for passing an air current to and through said unit in contact with the outer surfaces of said conduits and in such a direction that it impinges upon said conduits serially, a manifold for supplying refrigerant fluid to the interior of said conduits positioned so

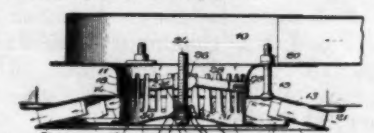
as to lie across the inlet ends thereof, means connected to the end of the manifold toward which the air current moves for feeding refrigerant thereto. . . .

2,791,169. DIFFUSER WITH A DETACHABLE DEFLECTOR MEMBER. Harry Daninhsch, Danbury, Conn., assignor to Connor Engineering Corp., Danbury, Conn.



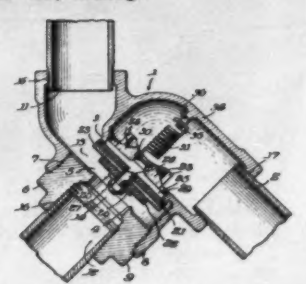
1. In a device of the character described, an annular plate for attachment to the outlet of an air duct, a perforated sleeve attached centrally of the plate and forming an air passage projecting from the plate, a cup-shaped hood fitted over the sleeve, a damper carried by the hood and adjustable up and down within the sleeve, the hood having a side wall formed with an air orifice, an arcuate perforated plate disposed within the hood and interposed between the air orifice and the perforated sleeve, said arcuate perforated plate being carried by and removable with the hood. . . .

2,791,170. AIR OUTLET DEVICE FOR VENTILATING APPARATUS. Leonard R. Phillips, East Hartford, Conn., and William J. Waeldner, Farmington, Conn., assignors to Anemostat Corp. of America, New York, N. Y.



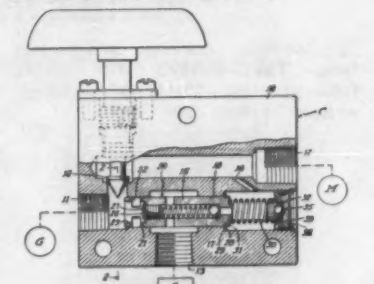
1. An air outlet device for ventilating apparatus including a member having therein an opening through which flows supply air delivered to the device, a valve for regulating flow of supply air through said opening, said valve being of cup-like form and including a tubular skirt portion closely fitting said opening and longitudinally slidable therein, said skirt portion being open at its rear end and closed at its front end as regards the direction of flow of supply air through the device and having therein elongated slots disposed in side to side relationship to each other and extending longitudinally thereof. . . .

2,791,228. TWO-WAY CHECK VALVE. Edward W. Carr, Cicero, George E. Hansen, Elmwood Park, and John Adelman, Chicago, Ill., assignors to Crane Co., Chicago.



3. In a valve construction, the combination comprising a body having an inlet and a ported seat in communication therewith and a second ported seat in parallel opposed spaced apart relation with the first named seat, said body having two additional avenues of fluid transmission leading exterior of the body, one of these avenues leading through the port in said second ported seat, the other avenue being in communication transversely with the space between said ported seats. . . .

2,791,229. SELF-ROTATING BY-PASS VALVE. George E. Pasco, Cleveland Heights, Ohio, assignor to Borg-Warner Corp., Chicago, Ill.



4. In a flow control valve arrangement comprising a housing having a first outlet, a second outlet and an inlet therein, means defining an adjustable orifice between said inlet and said first outlet to regulate the flow of pressure from said inlet to said first outlet, means defining a reciprocable by-pass valve located in a chamber between said inlet and said second outlet effective to divert varying portions of inlet pressure from passing through said adjustable orifice, said portions being related to the pressure in said first outlet whereby to cause the same to maintain substantially constant working pressure. . . .

(To Be Continued)

Servicing Automobile Air Conditioners

(Vol. 2)

BY C. DALE MERICLE

In response to numerous requests, the NEWS is resuming the popular series on automobile air conditioners. Latest models (1956 and/or 1957) of makes covered in the earlier articles, plus additional ones, will be included in this new series, which will describe units of leading "independent" producers as well as automobile manufacturers.

Readers wishing data on earlier models are referred to the first series, which appeared in weekly issues of the NEWS from June 13, 1955, through June 4, 1956, or the handy manual "Servicing Automobile Air Conditioners."

The new series, like the first, is not intended for the amateur or novice but for the qualified refrigeration mechanic well grounded in theory and practice. Thus, the series presents a detailed description of major components and normal operation of each model, but merely outlines service procedures. Those interested in fundamentals of air conditioning and refrigeration should read the numerous other manuals in The Refrigeration Library.

A. R. A. (2)

A.R.A. Mfg. Co.

P.O. Box 1636

Fort Worth 7, Texas

Controls

Controls of the 1956 Direct-Aire are mounted on the left side of cooling case assembly.

The 1957 Direct-Aire controls are centered on the lower edge of the unit. (See Fig. 1.)

Control panel for the trunk units (President and Executive models) is installed beneath the dash.

In all models controls provide for (1) turning blowers on and off as well as regulating their speed, (2) engaging or disengaging the Warner magnetic clutch driving the compressor, and (3) regulating refrigerating effect.

Two-speed blower controls are provided in all models. Right and left-hand blowers in President and Executive models are individually controlled.

When no cooling is desired, fan controls are turned off and the toggle switch for the clutch is turned off.

With the cooling system in operation (fans and clutch "on"), refrigerating effect in the 1956 President model is controlled by a lever on the bottom of the instrument panel connected by cable to a modulating by-pass valve mounted on a bracket attached to the compressor.

When the control lever is set for maximum cooling effect, the by-pass valve is closed, permitting full flow of refrigerant to the evaporator. When the control lever is set at less than maximum position, some refrigerant is by-passed around the evaporator, thus reducing refrigerating effect. Amount of refrigerant by-passed, and thus the amount of cooling effect, depends on the setting of the manual lever on the 1956 President control panel.

On Direct-Aire models (1956 and 1957), the 1956 Executive, and the 1957 President, control of refrigerating effect is accomplished by the Ranco thermostat, which cuts the compressor in and out by energizing and de-energizing the magnetic clutch.

This takes place when the

clutch toggle switch is set in "Automatic" position. The clutch toggle switch also can be set on "manual," in which case the compressor runs all the time the engine is running.

Thermostat on 1956 Direct-Aire is mounted in the fan shroud on rear of unit and is pre-set at the factory for 68° F. An access hole in the shroud on left-hand (driver's) side, however, permits screwdriver adjustment of the thermostat from approximately 61° to 75° F. Remote bulb of the thermostat is located in the return air stream.

On 1957 Direct-Aire models thermostat is so located that the temperature setting can be adjusted by a knob in the center of the control panel. Turning the knob clockwise lowers the temperature setting of the thermostat. Remote bulb of the thermostat on the 1957 Direct-Aire is located in the discharge air stream.

Thermostat of 1956 Executive and 1957 President is located directly below return air grille and filter in middle of package tray above cooling coil assembly in trunk.

Although pre-set at the factory, adjustments can be made in field on these thermostats with a screwdriver after removing return air grille and filter. Turning the thermostat adjustment screw clockwise lowers the setting; turning it counter-clockwise raises the thermostat setting.

SERVICE HINTS

Leak Testing

Testing A.R.A. units for leaks is done in the conventional manner with a halide torch and the compressor connected to a drum of Refrigerant-12 through a gauge manifold.

If a leak is present but cannot be pinpointed in this manner, the manufacturer suggests applying high pressure to the system with dry air or nitrogen. System should be brought up to 150 p.s.i.g. for this test. Refrigerant-12 is also in the system, of course, so the leak under the high pressure test is detected with the halide torch.

Evacuating System

After a system has passed the leak test but before it is charged

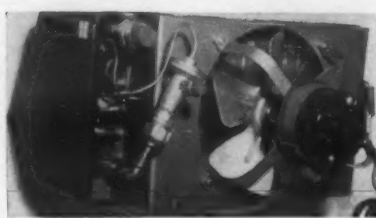


FIG. 1—Rear view of 1956 "Direct-Aire" unit, A.R.A.'s under-dash conditioner.

with refrigerant, it must be evacuated. A.R.A. recommends the use of an evacuating pump for this purpose.

"Never use compressor as an evacuating pump as installed on engine of car," the manufacturer cautions. "Undue slugging of compressor oil will be the result, and low level oil line in crankcase of compressor will cause damaging effect to rods and bearings."

If an evacuating pump is not available, the system should be purged. On the 1956 President, and any other model equipped with a modulating by-pass valve, this valve must be placed in "full cooling" position before evacuating, purging, or charging unit.

Charging System

Refrigerant-12 is employed in all A.R.A. systems.

Charge in Direct-Aire under-dash units is approximately 3 lbs.; in the Executive and President units, 3½ to 4 lbs.

All systems should be charged, of course, until no bubbles show in the sight glass.

These systems are charged through the low side with the unit running, but the unit should not be started until a refrigerant pressure of 40 p.s.i.g. shows on both the high and compound pressure gauges. Car engine should be run at the equivalent of 30 to 35 m.p.h., and a 20-in. fan placed in front of the car to provide additional cooling for the condenser.

When charging has been completed, as noted by absence of bubbles in sight glass, the low-pressure manifold valve and refrigerant drum valve should be closed and the car engine speeded up to about 50 m.p.h. to check system for satisfactory cooling and air circulation.

Trouble Chart

The following can serve as a guide to diagnosing service complaints on A.R.A. conditioners:

No cooling.

This can be caused by:

1. Broken compressor drive belt.
2. Blown fuse in cables from automobile accessory post.
3. Loose electrical connections.
4. Fan motor failure.
5. Magnetic clutch failure.
6. Thermostat failure.
7. Complete loss of refrigerant.
8. Coil passages blocked by ice.
9. Expansion valve inoperative or plugged.
10. Modulating by-pass valve stuck open (1956 President).
11. Faulty compressor.

Inadequate cooling.

This condition can be caused by:

1. Drive belt slipping.
2. Shortage of refrigerant.
3. Overcharge of refrigerant.
4. Condenser clogged with dirt, bugs, etc.
5. Air in system.

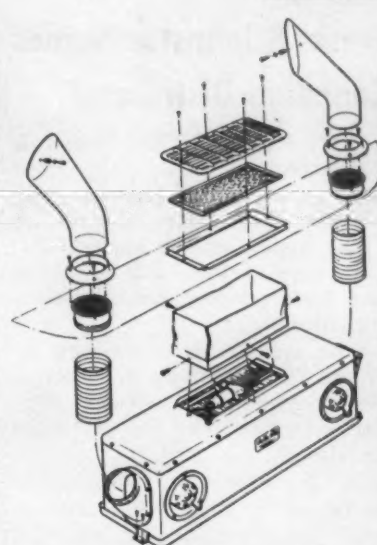


FIG. 5—Exploded view shows duct connections and cooling case assembly of 1956 "Executive" model.

6. Shortage of water in car cooling system.
7. Faulty compressor.
8. Improper setting of thermostat.
9. Faulty operation of modulating by-pass valve or control cable (1956 President).
10. Air filter clogged.

(Next instalment will discuss Artic-Kar auto air conditioners.)

Bristol Moves Office

WATERBURY, Conn. — The Pittsburgh district office of The Bristol Co. has recently moved into a new building at 2250 Noblestown Rd., according to H. E. Beane, company vice president.

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MISCELLANEOUS

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Cooling Sales --

(Concluded from Page 1, Col. 3)

truckloads of Carrier room air conditioners moved into the hands of dealers," he said.

L & P Electric Co. in Brooklyn sold 8,485 Fedders room air conditioners to dealers in three days at the height of the heat wave—a new record for a 3-day period.

A Linden, N. J. dealer said he sold 42 units in five hours. A Trenton, N. J. store sold 200 General Electric units in a week and ordered another truckload.

A Painesville, Ohio dealer reported selling room air conditioners at the rate of one every 20 minutes—for a while. Twenty units a day was claimed as average for dealers in Cleveland.

Distributor members of the Electric League of Cleveland said they shipped more unit in one day during the heat wave than they did during the entire month of May.

Dehumidifier sales in Cleveland were reported to be triple those of last year at this time.

On two days of the heat wave, Igoo Bros., Fedders distributor in Newark, N. J., shipped more than \$1 million worth of units.

Washington, D. C. dealers found that anything that would cool would sell.

Philadelphia distributors found themselves up to two weeks behind on installation and service work. Some were operating around the clock.

The New York Stock Exchange found that hot weather brought new interest in air conditioning stocks. Several prominent air conditioning equipment makers were recommended as the "best current opportunities" by one broker.

The Vornado distributor in New York City complained of shortages of automobile air conditioning units. Installations were falling a week behind demand, he estimated.

Supermarket Plan --

(Concluded from Page 1, Col. 2)

Shop-Rite now has 65 member stores in New Jersey.

These large super merchandising centers would sell any item they could at the traditional supermarket low markup.

The committee suggested that they might continue to act jointly through Wakefern to establish a division to design stores, provide central refrigeration service, provide central repair service, establish sources of financing, and get best possible rates on all classes of insurance.

The whole idea is still in the discussion stage, the committee emphasized.

Texas Air Conditioning Groups Exchange Speakers

FORT WORTH, Texas — Edward W. Norwood, of Houston, vice president and general manager of Conditioned Air Inc., was the speaker at a recent luncheon meeting of the Fort Worth Air Conditioning Association.

E. D. McCoy, executive secretary of the association, said the program was one of a series in which air conditioning trade groups in Fort Worth, Dallas, Waco, and Houston are exchanging speakers. Earlier, Paul V. Barmann of Fort Worth spoke to the Houston group.

Fraser & Johnston Names Canadian Distributor

SAN FRANCISCO—Fraser & Johnston Co. has appointed North American Natural Gas Services, Ltd., Calgary, Alberta, Can., distributor for the complete line of Fraser & Johnston gas furnaces and air conditioning equipment.

The distributor's territory includes the provinces of Alberta, Saskatchewan, Manitoba, Ontario, Quebec, and the maritime provinces.

E. A. Easton, general sales manager for Fraser & Johnston, said the principals of NANGS, Ltd., are L. C. Farmer, president, and Charles McNutt.

Farmer has been active in development of large gas lines to serve other parts of Canada from natural gas fields in Alberta. The Trans-Canada gas line is going into Manitoba this year, probably by September.

The following year the line will go into Ontario and Quebec, and then be extended into the maritime provinces, Farmer reported.

As distributor, North American Natural Gas Services is active in making gas-fired equipment available in territory now served from the Alberta fields, as well as in territories to be serviced by the big Trans-Canada lines. It is reported seeking other gas appliance lines such as boilers, hot water heaters, and gas-fired incinerators.

Declares 2% Dividend

DAYTON—Lau Blower Co. has declared a 2% stock dividend.

A company spokesman said the current quarterly dividend will be in stock rather than cash to conserve its cash because of a strike since May 1 at the plant and because of the trend in general business conditions.

G-E To Make Compressor Anti-Bid Shopping -- For Some G-E Room Units

(Concluded from Page 1, Col. 5)

LOUISVILLE, Ky. — General Electric Co. soon will begin limited production of a hermetic compressor of its own design for (G-E) room air conditioners but will continue to purchase the majority of its room-unit compressors from Tecumseh Products Co., according to a G-E official.

Paul M. Augenstein, general manager of G-E's room air conditioner department, said the company's compressor will be manufactured in the new Appliance Park air conditioner plant. This will be the first time that G-E has made an air conditioner compressor.

Limited production of 1958 room air conditioners is scheduled to get under way this month at the new plant. The department was recently moved here from Erie, Pa.

tor doing a Federal construction job is free, once he's won the contract, to shop for lower bids from subcontractors than were originally offered. Any resulting savings now go into the general contractor's pocket.

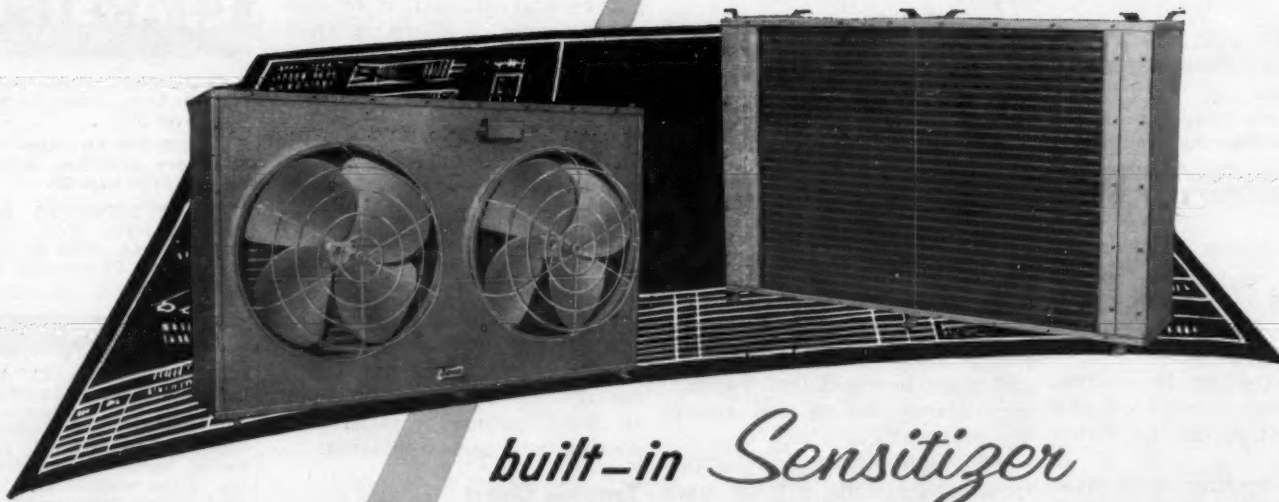
General contractors strongly opposed the measure last year, but reportedly are backing it now. Pointing out that the bill came close to being passed at the last session of Congress, one Capitol Hill "insider" commented that "They've read the handwriting on the wall."

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